

Consumer Reports

"FACTS YOU NEED
BEFORE YOU BUY"

VOL. 11, NO. 7

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JULY, 1946

NEW "ECONOMY" CARS

**Console
Radios**

**The
Civilian Jeep**

**Frozen
Foods**

**Shampoos
for the Hair**

**Sunburn
Preventives**

**Cosmetic
"Stockings"**

**Photo
Viewers**

**Table
Radios**

**Waterproofing
Your Cellar**

**Advice on
Auto Parking**

**Asthma and
Hay Fever**

**Auto-Eroticism
in Children**

CONSUMER REPORTS

Volume 11, No. 7

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Slump or Crash

The question for consumers now is not how to prevent inflation, because it's too late for that. The question is how to keep prices from running away.

Prices are on the way up, thanks to the actions of Congress and to the appeasement policies of OPA even before the expiration of the old Price Control Bill on June 30th. The question is whether prices will go up 25% or whether they will rise 100% or more before the trend changes and the curve starts downward.

Get this straight: Business will not police itself and hold prices down despite all the pious protestations of the National Association of Manufacturers and the Wherrys and the Tafts. It is not to damn business and businessmen, but only to describe human nature, to say that at any particular moment business sets prices at the level which will bring the highest profits. And at this moment in the period of reconversion, with shortages in many fields still acute, the highest profits are to be made at the highest prices that sellers dare charge.

And get this straight too: The claim that uncontrolled prices will bring out so much production that prices will go down in no time is fantastic. Prices were uncontrolled after World War I, and for a long time they went up and up until the economy went into a tailspin. Prices a thousand percent higher than they are now couldn't bring out enough production of houses, automobiles, textiles, sugar, fats and many

other foods to end acute shortages and restore normal competitive controls to the market. Furthermore, monopoly has grown fatter than ever during the war and its dead weight is great enough to hold down the safety valve of free competition even when materials, plant capacity and labor are plentiful.

In this situation, with its unpleasant potentialities for consumers, the question is whether the living standards of millions of families are to be destroyed or only badly damaged, whether a few million or twenty million families are to have their savings wiped out before the tide turns, whether a few or many must face hunger, whether we are to go into a slump or into a crash when it's all over.

And consumers themselves in large measure can write the answer to the question. How high sellers will dare push prices will depend on the reaction of consumers to price rises. If consumers just swallow every price rise and those with enough money to do it keep on buying more and more as prices go higher and higher, then prices will go still higher. If they remain passive while government officials fail to use their remaining powers to fight inflation then government efforts for the benefit of the consumer will become completely worthless.

Consumers have lost a major battle but they have not lost the war. They still have left the weapons of buyer's strike, organized protest, and—next November—the ballot. But make no mistake: the war will be lost if all these weapons are not used.

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ECONOMY-MODEL CARS

Nash 600—Studebaker Champion—Crosley

The wonders of mass production have added a lot of size, weight, power and chromium trim to such cars as the *Ford*, *Plymouth* and *Chevrolet*—so much so that they're virtually indistinguishable from the "large cars" as they come driving down the street. Which may be all very well for the car owner who wants to keep up with the Joneses—but not for the man who would like to have a car that's relatively inexpensive to buy and run. For along with the "improvements" which have made the small car look and behave more and more like the large car over the years have come corresponding hikes in both initial cost and upkeep.

At the present time there are no true "economy models" produced in this country, if you take into account the four criteria which would fit a car into this category:

- (1) The initial cost.
- (2) The gas and oil to run it.
- (3) The fixed expenses.
- (4) Repairs and maintenance.

At the present time, the leading American cars in the "economy" class derive savings only from (2)—the number of miles they can make on a gallon of gasoline. This includes the *Nash 600* and the *Studebaker Champion*, both of which do well in terms of miles per gallon, but both of which cost as much to buy as the cars in the "all-three" group.

Nor does this saving in gasoline amount to anything as substantial as might at first appear from the mile-

age figures. With gasoline costing something like 20¢ a gallon, and with the "economy" models running some 19 miles on the gallon instead of the 16 which might be expected on one of the "all-three," the total saving would amount to about \$20 per 10,000 miles. The average driver uses his car less than this amount each year, but of course the high-mileage driver or the fleet owner would derive considerably higher fuel savings.

In past years, *Willys* has cost less to buy than the "big three" and therefore was able to offer some savings in first cost (1), as well as in fuel cost, and the new *Willys*, when it comes out, may fit more closely into the "economy" bracket. In the future, the "light" cars promised by *Ford* and *Chevrolet* will presumably also cost less both to buy and to run than the regular "big three."

Small European cars, in general, show great savings on fuel, but usually cost *more* than normal for repairs because their small engines work hard and wear out quickly. This also applies in some degree to this country's *Crosley*.

Below are reviewed the American economy group cars now in production. Information on the new *Willys* line, which will include a 6-cylinder passenger car, will be presented in a later article. This report is not based on actual trials of the cars involved (CU has not yet been able to purchase these cars) but no conclusions are presented which the companies' official statistics and other available information do not warrant.

NASH 600

No 1946 car has had more thorough engineering revision than the *Nash 600*, model 4640. A stronger and quieter transmission, various engine refinements, better accessibility and a new front suspension are the highlights. The latter is of the usual cross-lever and coil spring type (replacing the *Lancia* type previously used), but has unique features of its own. For easy repair the whole unit can be taken out by removal of four bolts. The coils are wider apart than is usual, giving the car greater stability. The design eliminates the usual kingpin support arm, saving weight and lowering bearing stress.

Reference to the Statistical Table below shows an excessive over-all length for a car with a 112-inch wheelbase. *Nash* is higher than average, too, and two inches wider than other low-priced cars. *Nash* advertising still refers to the car as "500 pounds lighter" (lighter, that is, than the 1940 *Lafayette* which it replaced in 1941), but the weight of the new *Nash* is up 125 pounds over that of the 1942 model.

Note the excellent *Nash* tire capacity, the high compression ratio, and low gas mixture figure per mile. Both the latter spell good gas economy, which should average two or three miles per gallon better than the *Ford-Chevrolet-Plymouth* group.

An outstanding feature of the *Nash* is its roomy and comfortable body. Its dimensions compare favorably with any car at any price. Vision

Statistical Comparison of the Cars

	Overall Length (in.)	Tax Hp.	Shipping Weight (lb.)	Tire Capacity ¹ (lb.)	Axle Ratio (to 1)	Power ² Ranking in Group	Compre- sion Ratio (to 1)	Piston Displace- ment (cu. in.)	Engine Revs per Mile	Gas ³ Mixture per Mile (cu. ft.)	Brake ⁴ Loading (lb. per sq. in.)
CROSLEY	145	10	1200	570	5.17	3	7.5	44	5080	65	30.5
NASH 600	199 ^{1/2}	23.4	2780	730	4.1	2	7	172.6	3059	153	26.7
STUDEBAKER CHAMPION 6G	192 ^{3/4}	21.6	2707	223	4.1	1	6.5	169.6	3310	162.5	25

¹ Tire makers' rated tire carrying capacity in pounds (4 tires) minus road weight of car (shipping weight plus 150 pounds).

² Number 1 car has greatest high gear pulling power in proportion to weight, and so on.

³ "Lung capacity" of the engine times the engine revolutions per mile—low figure is favorable to economy.

⁴ Weight of fully loaded car (shipping weight plus 1000 pounds) divided by area of brake lining—low figure favors longer brake life.

for the short driver is somewhat below average. Frame and body are one unit on the 1946 model. This is satisfactory structurally, but under certain circumstances it can be more expensive to repair when damaged.

Compared with the average of the "big three" cars, *Nash 600* is under-powered. It has less high-gear pulling power in proportion to its weight, even with the higher axle ratio furnished with *Nash* overdrive. But unless you frequently push the accelerator clear to the floor on your present car, this is not a serious objection. (Use of overdrive—a fourth speed engaged by releasing the accelerator at or above 25 mph, and disengaged at any time by flooring the accelerator—as offered at extra cost on both the *Nash 600* and *Studebaker Champion*, gives increased gas and oil mileage, longer engine and clutch life, and a quieter high speed ride.)

The *Nash* service network is smaller than that of the "big three." This matters chiefly to the tourist, provided service in one's own neighborhood is adequate. The over-all size of the *Nash* is either a drawback or an asset. It's a drawback if you don't like "blown up" cars, but prefer something neat, compact (but roomy), and easy to park or house (in which case, read about the *Studebaker*, below). *Nash* size is an asset to you if you prefer a light, economical car to look neither small nor light.

STUDEBAKER CHAMPION

The 1947 *Studebaker Champion*, model 6G, has the same wheelbase as *Nash 600*, the same rear axle ratio, and approximately the same size engine. At this point similarity ends abruptly. Unless *Studebaker*, in this first 1947 model by an established manufacturer, has misjudged the trend, next year's cars will have wider seats, be lower, and probably

have their engines farther forward to give easier riding and increase utilization of car length. *Studebaker* also features a large increase in glass area, giving better than average vision for driver and passengers.

For 1947, the *Champion* uses the 1942 power plant with no major changes except a return to aluminum pistons. Everything else is new. The tires are 5.50 x 15, a new size, on wide-base rims which aid stability. The frame is box section, as in *Chevrolet* and *Chrysler* lines, with no X-member. This permits a lower floor. The driveshaft is in two sections, with three joints, eliminating rear floor tunnels and preventing whip from the longer shaft which the new engine location would otherwise require. Since the rear seat is now entirely forward of the rear wheels (not merely of the axle), the rear tread is narrower than that on most other cars by nearly six inches. The *Champion*'s larger brakes are self-adjusting; the brake pedal will have the same travel until the lining is worn out. Its engine is directly between the front wheels—much farther forward than before. The front wheels are entirely positioned by cross levers; the transverse spring formerly used for this purpose now only supports the car and has been made softer. Accessibility has been improved throughout.

Over-all length, width and height (192 3/4 inches, 69 3/4 inches, and 60 3/4 inches loaded, respectively) are all less than in the 1942 *Champion*—or any other full-size car now on the market. The front seat is 4 1/2 inches wider than in '42; the rear seat—which no longer has to fit between the rear wheels—is 10 inches wider (now 58 inches). There is more legroom in front. Seats have been lowered to 13 3/4 inches above the floor; headroom is standard. The

sedan has no rear quarter windows. These dimensions show that *Studebaker* has lived up to the predictions that true postwar cars would be bigger inside and smaller in over-all length and width.

Any new model normally requires a shakedown period in production before the cars come through "right," though *Studebaker*'s record in this respect was good when the original *Champion* was introduced. Beyond this, there is one other questionable design feature in the new *Champion*—the concentration of weight at the front of the car, which may cause loss of traction in Winter and awkward handling on winding Eastern roads.

CU intends to road-test the car thoroughly as soon as one can be obtained and will report in the future on this feature, as well as on fuel economy, etc.

The comment made above on the *Nash* dealer organization applies also to *Studebaker*.

CROSLEY

In June, 1946, the technical editor of *The Motor* (London) described a composite average European small car, of the type representing 40% of production just before the war. Here is how it compares with the *Crosley*:

	European Average	Crosley
Piston		
Displacement	74 cu. in.	44 cu. in.
Horsepower	40	26.5
Wheelbase	94 in.	80 in.
Weight	2012 lb.	1200 lb.
Width rear seat	40.5 in.	30 in.

The *Crosley* evidently belongs with an even smaller type representing only 25% of European production.

The new *Crosley* is powered with the revolutionary *Taylor* 4-cylinder engine, made up chiefly of hydrogen-brazed sheet metal and steel tubing. The engine is very light, and the weight thus saved, plus the engine's very high compression ratio—7.5 to 1, 6.5 being normal—will give the car high gas mileage. Fifty miles per gallon at 30 mph is claimed. Similar engines were ordered by the Navy during the war, following strenuous tests.

Revolution in the *Crosley* ends with the engine; the rest of the chassis units are mostly standard parts. The body is aluminum, and it was originally planned to sell the car unpainted. In any small car, passenger comfort is of primary importance, particularly to American users. *Crosley* specifications reveal that the



THE STUDEBAKER CHAMPION: Redesigned for more room inside; smaller over-all.

front seat is $7\frac{1}{2}$ inches from the floor, 44 inches wide, and only $15\frac{1}{2}$ inches deep. Front legroom is normal, but headroom is only 34 inches in front and 32 in rear (36 is a normal minimum). The rear seat is 12 inches high and too narrow (30 inches) for even two-passenger comfort. Details of the spring suspension indicate that the *Crosley* will not ride well. Over-all length, width and

height are 145, 49 and 57 inches.

There is no reason to suppose the *Crosley* can be disposed of in future used car markets except at a sacrifice figure. As a passenger car, it is rated as "Not Acceptable," because of its small size (an unpopular size even in Europe), subnormal comfort, and expected high depreciation. As a light delivery, the *Crosley* does have possibilities for its very low fuel cost.

they do not have the 100 megacycle FM band. In the future the standard broadcast band will probably service only the midwestern and western rural areas.

In view of this situation, one cannot dismiss lightly the charge that many radio manufacturers are deliberately making only obsolete (non-FM) radios so that they can sell all over again to the same customers a year or two from now. The fact that the new FM band was only recently assigned by the Federal Communications Commission with any finality may be a good excuse, but it has not deterred Zenith, Pilot, Philco and Scott from coming out with radios which include the new (100 mc.) FM band. (These are now being tested.)

In view of this situation, CU is testing non-FM console radios for the benefit of those who can't wait until good FM receivers are available, or who can afford to buy a receiver which will soon be obsolete; and for those who live in rural areas where FM service cannot be expected in the next few years.

TUBES ALONE NO CRITERIA

While in the ratings below the number of tubes has been mentioned in each instance, it must again be pointed out that radios should not be bought on the basis of number of tubes. In Consumers Union's experience, it has been found that the number of tubes bears no direct relation to the over-all performance of the radio. Therefore, the number of tubes in the descriptions below is stated for purposes of identification only.

When observing the working parts of a radio from the back, consumers are sometimes struck by the large amount of unused space. Many jump

Console Radios

Four brands tested were "postwar" models, but they were prewar in basic design

The first four postwar console radios tested by CU show no radically new design features, but the prices are substantially higher than those for similar prewar radios. Poor furniture workmanship is generally evident in the cabinets.

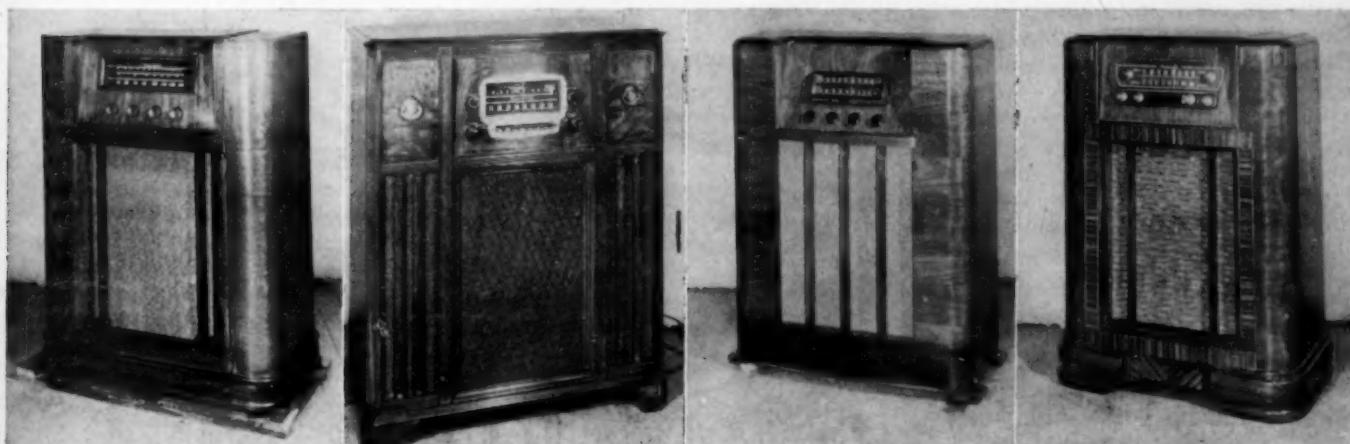
As compared with table models, a console radio should have considerably greater volume and give better reproduction of the lower tones. This is due, in part, to the larger speaker, and also to the larger cabinet, since a large cabinet is better acoustically than a small one. The four console sets tested by CU were superior to the table models in both these respects, though there was considerable variation among the four.

Because the electrical parts of any radio, whether table or console, are essentially the same, a large radio does not necessarily have substantially better sensitivity or interference rejection than a smaller one. In fact, among the samples tested, none of the consoles had as good sensitivity as some of the better table models listed in this issue.

All four console radios had one

marked deficiency—they could not receive FM. The lack of FM is not in the same class as lack of, for example, short wave. For Consumers Union shares the opinion of many that FM will in a few years become the major source of radio listening in many parts of the United States. In a console radio, FM can offer an absence of static, an absence of interferences such as whistles and telegraph signals, and if the radio is otherwise well-designed, higher tone fidelity. Nor is the fact to be overlooked that many times the present number of stations can be accommodated on FM.

Consumers living in large cities where FM service is already available will benefit immediately not only from the higher quality reception but also from the present, even if temporary, lack of advertising on FM stations. Consumers in or near a city which now has no FM station may be reasonably sure that FM service will be available to them in the near future. It seems certain that most radios purchased at this time will become obsolete within their lifetime if



SPARTON: \$87.45

STROMBERG-CARLSON: \$99.95

AIRLINE: \$53.95

MOTOROLA: \$129.95



to the conclusion that they are being offered something of a fraud—that is, a small radio in a large package. Such is not necessarily the case. A large, solid cabinet is very desirable for good reproduction of music. As a matter of fact, anyone can prove this for himself by removing the loud speaker of a midget radio from its case and mounting it in a large cabinet with a hole of the right size to fit the particular loud-speaker. Such a procedure will almost invariably result in greatly improved tone quality. Because of the desirability of a large, solid cabinet, a large part of the cost of a console radio should go into the cost of the cabinet.

Another item that consumers occasionally pay attention to is the size of the loudspeaker, since in general, a large speaker is preferable to a smaller one. Size is usually given as the diameter of the widest portion and varies from 4 or 5 inches in midgets to as much as 15 inches in a large console radio. In CU's tests, no credit was given for loudspeaker size, since the tone quality and volume reflect loudspeaker size as well as all other design factors.

The following attributes of the four console radios were subjected to tests: Tone, volume, sensitivity, interference rejection, automatic volume control, broadcast tuning range, dial calibration, tuning ease, short-wave bands, hum and shock hazard. Unless otherwise stated, all of the radios listed were for a-c operation only. They had a single knob for treble and bass tone control, no tuning eye and no push-button tuning.

Prices in the ratings are OPA Zone I (Eastern) ceiling prices.

ACCEPTABLE

Radios are listed in order of estimated over-all quality.

Sparton 7AM46 (Sparks-Withington Co., Jackson, Mich.) \$87.45. Seven tubes including rectifier. Walnut finish cabinet. Built-in rotatable loop antenna. Fairly good tone; low volume for a console; fairly good sensitivity; poor automatic volume control; fairly good interference rejection. No shock hazard, no short circuit hazard. Police and short wave bands (from 1.6 to 18.0 mc.). No bass control.

Stromberg-Carlson 1120-LW (Stromberg-Carlson Co., Rochester, N. Y.) \$99.95. Seven tubes including rectifier. Walnut finish cabinet. Built-in rotatable loop antenna. Good tone; fairly good volume; poor sensitivity and automatic volume control; fair interference rejection. No shock hazard, no short circuit hazard. Shortwave band covering 31-meter broadcasts. Six mechanical push-buttons.

Airline Cat. No.—2500R (Montgomery Ward). \$53.95 plus shipping charges. Seven tubes including rectifier. Walnut finish cabinet. Built-in fixed loop antenna for broadcast; foil antenna for short-wave. Fair tone; fairly good volume; very poor sensitivity; good automatic volume control; fair interference rejection. No shock hazard, no short circuit hazard. Standard short wave band (from 6.0 to 18.0 mc.). No bass control.

NOT ACCEPTABLE

The following was rated "Not Acceptable" because of its boominess and lack of sibilants in speech reproduction resulting in speech which was practically impossible to understand.

Motorola 85K21 (Galvin Manufacturing Corp., Chicago). \$129.95. Eight tubes including rectifier. Walnut finish cabinet. Built-in rotatable loop antenna. Poor, boomy tone; very good volume; fair sensitivity and automatic volume control; fairly good interference rejection. No shock hazard, no short circuit hazard. Short wave band (from 5.5 to 12.0 mc.). Six electrically-tuned push buttons.

Separate Tone Ratings

For those consumers who consider tone the chief consideration in the purchase of a console radio, CU lists below the estimated tone quality of the radios rated in the accompanying article.

Good: *Stromberg-Carlson 1120-LW.*

Fairly good: *Sparton 7AM46.*

Fair: *Airline Cat. No.—2500R.*

Poor: *Motorola 85K21.*

Small Radios

A report on ten more new models, bringing to 43 the number of table radios which have been tested in CU's laboratories since postwar production began

This is a report on ten new table model radios, bringing the total of postwar table sets reported on thus far to 43. Of these ten, two are "Not Acceptable" and one is added to the "Best Buy" list.

The "Best Buy" is the *Admiral 6T02-5B1*, OPA ceiling-priced at \$24.50. This radio, in a plastic cabinet, has the same chassis as the \$34.95 *Admiral 6T04-5B1*, reported on in March, which was in a wood cabinet. Note that the price of a wooden box these days is over \$10! Although not as good a radio nor as good a buy as the \$27.95 *Admiral 6A1* which still heads the "Best Buy" list, this 5B1 in a plastic cabinet is a good value on the current market.

Of the two radios which were judged to be "Not Acceptable," one was the *Teletone 110*, which was so rated because of the presence of a very objectionable hum in the sample tested. This hum was far worse than in any of the other radios tested.

The other "Not Acceptable" radio was the *RDR Magic-Tone 500W*. Its outstanding bad features were very low sensitivity and the kind of distortion which is evidenced by the appearance of growling low tones when certain combinations of musical tones come through the receiver.

The ratings which follow cover all of the table models CU has tested this year. Details are, however, given only for outstanding sets previously rated and for the 10 new radios. The matter of hum was not mentioned, even though it was taken into account in scoring the radios in the earlier reports in this series. The ratings this month indicate which radios had noticeable hum.

Except where otherwise stated, all of the following radios were for a-c and d-c operation; and all had a built-in loop antenna.

Prices given in the ratings were OPA Zone 1 ceilings at the time of purchase. On the models tested, Zone 2 prices were about 5% higher. Unless otherwise stated, brands were available nationally.

BEST BUYS

The following were judged to offer the best value for the money in the order given:

Admiral 6T01-6A1 [from March Reports] (Admiral Corp., Chicago). \$27.95. Six tubes including rectifier. Small table radio (9" h. x 12" w. x 7" dp.) in brown plastic cabinet. Relatively good tone and volume; excellent sensitivity; excellent automatic volume control; fair interference rejection. Dial poorly calibrated.

Motorola 65X11 [from February Reports] (Galvin Mfg. Corp., Chicago). \$26. Six tubes including rectifier. Large midget radio (8" h. x 12" w. x 7" dp.) in brown plastic cabinet. Relatively good tone, volume and sensitivity; excellent interference rejection. No short circuit hazard but slight shock hazard.

Airline Cat. No.—1504M [from April Reports] (Montgomery Ward). \$17.95 plus postage. Five tubes including rectifier. Midget radio (7" h. x 10" w. x 6" dp.) in ivory plastic cabinet. Fairly good tone; excellent volume; fair sensitivity; poor interference rejection. No short circuit hazard but some shock hazard. Police band. Available also in brown plastic cabinet at \$17.50 plus postage, as Cat. No.—1503M.

RCA 56X [from March Reports] (RCA Mfg. Co., Camden, N. J.). \$24.10. Six tubes including rectifier. Large midget radio (8" h. x 12" w. x 7" dp.) in brown plastic cabinet. Fairly good tone; good volume and sensitivity. Fairly good interference rejection. Treble control switch. No short circuit or shock hazard; Underwriters' approved.

Admiral 6T02-5B1 (Admiral Corp.). \$24.50. Five tubes including rectifier. Small table radio (8" h. x 12" w. x 7" dp.) in brown plastic cabinet. Good tone; excellent volume; fairly good sensitivity; poor automatic volume control; fair interference rejection. Slight shock hazard but no short circuit hazard; Underwriters' approved. Same chassis as **Admiral** 6T04-5B1, below.

Silvertone Cat. No.—6002 [from April Reports] (Sears, Roebuck). \$8.88 plus postage. Four tubes including rectifier. Small midget radio (5" h. x 6" w. x 4" dp.) in ivory-color metal cabinet. Fair tone; low volume; poor sensitivity; poor interference rejection; noticeable hum. No short circuit hazard, but slight shock hazard; Underwriters' approved. Had a hank antenna instead of the usual loop. Although relatively low in quality, this was considered a satisfactory "minimum" radio, and a "Best Buy" because of its low price.

ACCEPTABLE

(In estimated order of over-all quality)

Motorola 65T21 [from February Reports] (Galvin Mfg. Corp.). \$45.50. Six tubes including rectifier. Table radio (10" h. x 18" w. x 10" dp.) in wood cabinet. A-c only. Excellent tone, volume and sensitivity; fair interference rejection. No shock or short circuit hazard. Good combination bass and treble tone control; short wave band.

Admiral 6T01-6A1 (see "Best Buys").

Motorola 65X11 (see "Best Buys").

Admiral 6T04-5B1. \$34.95 (see March Reports).

RCA 56X (see "Best Buys").

Admiral 6T02-5B1 (see "Best Buys").

Sentinel 294T (Sentinel Radio Corp., Evanston, Ill.). \$41.95. Six tubes including rectifier. Small table radio (10" h. x 15" w. x 7" dp.) in walnut finish wood cabinet. Good tone; excellent volume; fairly good sensitivity; good automatic volume control; fair interference rejection. Slight shock hazard but no short circuit hazard. Sample tested had tuning range far short of high end of broadcast band. Standard short wave band. Variable tone control.

Airline Cat. No.—1804M (Montgomery Ward). \$26.95 plus postage. Six tubes including rectifier. Small table radio (9" h. x 13" w. x 6" dp.) in walnut finish wood cabinet with brown plastic dial inset. Good but somewhat boomy tone; excellent volume; fairly good sensitivity; poor automatic volume control; poor interference rejection. Slight shock hazard but no short circuit hazard. Tuning knob hard to turn; dial pointer slipped, stuck and squeaked, and was very bothersome to operate on sample tested.

Gilfillan 56E. \$27.15 (see May Reports).

Inadequate Tuning Range

The standard broadcasting channel in the United States is in the frequency range of 540 to 1600 kilocycles (kc); a standard radio receiver should be able to receive all wave-lengths between these extremes. It is common, however, to find a receiver which cuts off some small portion from one or both ends—in fact 20 of the 43 table models tested did so. In the ratings, mention is made of the defect only if there was a cut-off of 15 kilocycles or more at either end of the scale. This may or may not be an important factor to the buyer, depending on whether or not there is a broadcasting station with the missing wavelengths which would normally be within his listening range. It often varies from sample to sample of a given model.

Sonora RB-176. \$22.50 (see May Reports).

Philco 46-421. \$34.95 (see May Reports).

Philco 46-420I. \$29.95 (see May Reports).

Airline Cat. No.—1504M (see "Best Buys").

Pilot B-3. \$35.35 (see February Reports).

Pilot T-3. \$44.40 (see February Reports).

Temple E-514-M. \$29.95. Noticeable hum (see February Reports).

Silvertone Cat. No.—6051. \$29.45. Noticeable hum (see February Reports).

Trav-ler 5002. \$23.15 (see April Reports).

Stewart-Warner 9022B (Stewart-Warner Corp., Chicago). \$30.05. Six tubes including rectifier. Large midget radio (8" h. x 13" w. x 7" dp.) in ivory plastic cabinet. Slightly tinny but otherwise fairly good tone; excellent volume; poor sensitivity; fair automatic volume control; fairly good interference rejection. Slight shock hazard but no short circuit hazard; Underwriters' approved. Two-position treble switch. Noticeable hum.

Macy's 6511. \$24.94. Noticeable hum (see April Reports).

Garod 5A2. \$26.60 (see May Reports).

Farnsworth ET-064. \$23.15 (see May Reports).

Emerson 519. \$32 (see May Reports).

Emerson 504 (Emerson Radio & Phonograph Corp., NYC). \$34. Five tubes including rectifier. Large midget radio (9" h. x 11" w. x 7" dp.) in walnut finish wood cabinet. Fairly good tone; excellent volume; fair sensitivity; poor automatic volume control; fair interference rejection. Slight shock hazard but no short circuit hazard; Underwriters' approved. Tuning mechanism caught and clicked when turned past 1000 kc point. Insides appeared to be identical with **Emerson** 519, 518, 510, 502, 507, 522 and 520. Differences between **Emersons** rated, all with apparently identical chassis, probably due to variations in adjustments and parts.

Philco 46-250I. \$23 (See May Reports).

Emerson 518. \$20 (see April Reports).

Emerson 510. \$32. Noticeable hum (see April Reports).

Emerson 502. \$35. Noticeable hum (see February Reports).

Philco 46-200. \$19.70 (see April Reports).

Emerson 507. \$20 (see Feb. Reports).

De Wald A501 (De Wald Radio Mfg. Corp., NYC). \$29.95. Five tubes including rectifier. Midget radio (6" h. x 10" w. x 6" dp.) in brown plastic, lyre-shaped cabinet. Slightly tinny though otherwise fairly good tone. Good volume; poor sensitivity, automatic volume control and interference rejection. Short circuit and shock hazard. Police band. Noticeable hum.

Sentinel 93 W. \$28.50 (see May Reports).

Emerson 522 (Emerson Radio & Phonograph Corp.). \$23.50. Five tubes including rectifier. Large midget radio

(7" h. x 11" w. x 6" dp.) in ivory plastic cabinet with carrying handle. Slightly tinny but otherwise fairly good tone; excellent volume; poor sensitivity and automatic volume control; fair interference rejection. Slight shock hazard but no short circuit hazard. Underwriters' approved. Small, crammed dial; hard to tune. Noticeable hum.

Emerson 520 (Emerson Radio & Phonograph Corp.). \$35. Five tubes including rectifier. Large midget radio (9" h. x 11" w. x 7" dp.) in dark green plastic cabinet with ivory plastic speaker grille and dial cover. Fairly good tone; excellent volume; poor sensitivity; practically no automatic volume control; fair interference rejection. Slight shock hazard but no short circuit hazard; Underwriters' approved. Sample tested had tuning range far short of high end of broadcast band, and dial very poorly calibrated. Tuning mechanism clicked when being turned past 1000 kc point. Noticeable hum.

The following was considered a satisfactory "minimum" radio:

Silvertone Cat. No.—6002 (see "Best Buys").

The following radios were rated down because of poor tone:

Stewart-Warner 9003B. \$82.70 (see May Reports).

Stromberg-Carlson 1100-H. \$31.95 (see March Reports).

General Electric 100. \$29.30. Noticeable hum (see March Reports).

Bendix 0526A. \$22.95 (see March Reports).

NOT ACCEPTABLE

The following radio was judged "Not Acceptable" because of the presence of a very loud hum in the sample tested:

Teletone 110 (Teletone Radio Co., NYC). \$37.95. Six tubes including rectifier. Small table radio (9" h. x 13" w. x 8" dp.) in mahogany finish wood cabinet. Fairly good tone; excellent volume; poor sensitivity, automatic volume control and interference rejection. Short circuit and shock hazard. Recessed knobs hard to turn. Short, crammed dial. Very bad hum.

The following radios were judged "Not Acceptable" because of their poor rating on over-all quality:

Teletone 100. \$27.55 (see May Reports).

Teletone 122. \$24.95 (see May Reports).

RDR Magic-Tone 500W (Radio Development & Research Corp., NYC). \$23.95. Five tubes including rectifier. Large midget radio (8" h. x 11" w. x 5" dp.) in brown wood cabinet. Fair speech reproduction but bad distortion on music; good volume; poor sensitivity; practically no automatic volume control; poor interference rejection. Short circuit and shock hazard. Tuning knob hard to turn. Noticeable hum.

Parking Your Car

Some tips for the automobile owner

With your old car you probably have gotten used to jamming hurriedly into a parking space and going about your business. Your new car, if and when you get it, deserves better treatment. Now is a good time to review your parking habits, and we offer a modest checklist to aid you.

Tires will withstand rubbing *along* the curb better than running *against* it, but you can avoid both abuses with a little skill. As you pull up to the curb in your new car you may find yourself a little vague about where the front wheels are. Practice sighting across the car's front from your normal driving position, and notice what point on the hood lines up, visually, with the curbstone as you approach and draw parallel to it. Once the mark is established you will utilize it subconsciously.

It is worth while to do a little extra maneuvering so that the rear of your car isn't left sticking out into the traffic flow beyond the edges of other parked cars—an invitation to sideswiping. Don't park too close to the curb, either; if you are tight against it and well hemmed in front and rear, it is almost impossible to get out. Wider bodies and fenders on new cars, remember, are easily damaged by high curbs, and the long rear overhang on modern cars can swing into or over the curb if you turn sharply out of your parking space.

When maneuvering into or out of a space, learn to keep the car moving slightly while you turn the steering wheel. This is easier on your arms and much easier on the steering gear, linkage and tires. If you tend to race the engine while parking, better inquire how much a new clutch facing will cost, installed. That's what you're wearing out.

Backing into a space between two cars and parallel to the curb is not an easy task for anyone in a strange car (because real and imaginary sight lines for guidance haven't been established). The maneuver isn't even easy to describe. Start from a position slightly more than abreast of the parked car ahead of the space you are aiming for. Cut the front wheels quickly (in terms of distance covered—there is no hurry) to the right, then straighten them again so that the car backs into the space on a straight

line. Where this line, if projected, would intersect the curb, is what must be learned by experience. Cut the wheels to the left as soon as your car will clear the one ahead. If your rear tire strikes the curb before the maneuver is completed, it is best to pull out of the space and start over.

If you park on a slope, set the hand brake or leave the car in gear, or both. If your parking brake works on the rear wheels (except for *Chrysler* lines, most do), stepping on the foot brakes makes it easier to pull up the lever, and safeguards the hydraulic system against air leaks.

On the level, or if the slope is very gentle, park in high gear, in which there is less chance of damage if someone tries to push your car to make room. Damage is most likely if the car is parked in reverse. On a steep slope, park in low gear. If the slope is very steep, point the front wheels toward the curb—not away from it. Ordinarily, however, the front wheels should be left pointing straight ahead; otherwise pushing from behind may head your car out into traffic or up on the sidewalk.

KEEP IT LOCKED

Never leave your car unattended with the ignition key in the lock, even for a moment. Even a locked car can be stolen, but casual thieves and joy riders always select an unlocked car if they can find one. This simple precaution is a civic duty.

When stopping after a hard run, do not shut the engine off immediately. Letting it idle a few minutes will cool off the exhaust valves and prevent their warping.

In cold weather, don't stop the engine by pulling out the choke. It makes the car start easier, all right—because it washes the oil off the cylinder walls. Then when the engine starts, abrasion takes place from lack of lubrication.

Best starting techniques vary from one car to another (and from season to season) except in one detail: always push the clutch pedal down first and hold it down until the engine has started. This prevents setting the car in motion by mistake. In cold weather it also relieves the starter from having to churn the transmission gears in heavy grease.

The Civilian Jeep

A sturdy machine, but not all-purpose

For several years prior to the war, CU recommended the 4-cylinder Willys as a reliable and very economical passenger car. Its engine, clutch and transmission went to war in the versatile vehicle world-famous as the *Jeep*. Over half a million were built.

The civilian model of the *Jeep* is modified chiefly to make it work better for farmers. Changes in transmission and ratios allow it to pull harder and longer at slow speeds. With extra equipment it will also pull or drive a variety of farm machines, paint sprayers, pumps, etc. The civilian *Jeep* costs between \$1200 and \$1300 delivered, with driver's seat only—no top, no spare tire, no drawbar for pulling ploughs or trailers. These and all other items of equipment cost extra.

The Willys *Jeep* is therefore a rather expensive vehicle. Even farmers, for whom it was primarily designed, should make sure, before buying, that they have sufficient jobs for it to do which *nothing else will do as well* or at lower cost. That is, the *Jeep* must "pay out."

The *Jeep* will not pay out for anyone, if it spends most of its time on good roads, or working as a passenger car. It is almost completely unsuited for the latter use: the *Jeep* is hard to get into and out of; the seats aren't very comfortable; it rides badly by passenger car (or even by truck) standards; protection given by the top, especially in Winter, is rudimentary; it isn't very safe to carry children in. Maximum passenger capacity is four, and this almost com-

pletely usurps the freight space, which is small anyhow—limited to nine milk cans, or a few sacks of feed, or small crates or boxes. For more bulky freight, a trailer must be hooked on to the *Jeep*.

For non-professional use, chiefly on roads, the *Jeep* has much less utility, for most people, than a station wagon. In fact, Willys now plans production of an all-steel vehicle "combining *Jeep* ruggedness with station wagon utility and comfort." Such a vehicle is needed, but be sure that you do not read into the word "ruggedness" in the quoted press release "off-the-road ability"—or else delete the word "comfort." The two are practically incompatible.

For professional off-the-road (or bad road) use, Dodge offers—by way of contrast with the *Jeep*—a modified military truck, model WDX, having 4-wheel drive like the *Jeep*, and likewise with power takeoffs available front and rear. This truck has a roomy 1-ton body and steel cab, and costs only about \$500 more than does the *Jeep*.

Professional users will of course find the ordinary $\frac{1}{2}$ -ton pickup truck filling their needs at a price well below that of the *Jeep* for on-the-road service.

All this is not meant to disparage the *Jeep*; it is a wonderful vehicle in a hundred tough or busy spots, besides appealing to the suppressed desires of every road-bound motorist, or anyone with a streak of mountain goat in him. But it frequently isn't, even for farmers, a good buy on a dollars-and-cents basis.



THE JEEP has come back from the wars to limited civilian uses.

Liquid Stockings

A report on tests of this season's stocking substitutes

CU's report on liquid stockings this year is not the comprehensive report it has been in the past. Rather it is a check-up on brands found "Acceptable" last year. All but four of these brands—*Chantrey*, *Frances Denney*, *Marie Earle* and *Nina*—were available in time for testing.

As in the past, ratings of the 13 brands were based mainly on use tests by a group of volunteers. Each tester applied the leg make-up in the morning and wore it throughout the day. Qualities rated were appearance, ease of application, tendency to rub off on clothing, and resistance to water-spotting. From one to five bottles of each brand were tested.

Those products which were judged to have good appearance, which did not rub off and did not water-spot were rated "Acceptable." Brands which were acceptable in one color but not in another are listed as "Variable"; those which fell down on one or more of the characteristics listed above were rated "Not Acceptable."

Only seven of the brands rated "Acceptable" last year made the grade this year. Two brands—*Dorothy Gray Leg Show* and *Chiffon Liquid Hosiery* were found satisfactory in one color, but rubbed off or water-spotted in another color. Notable among the four brands rated "Not Acceptable" this year was *Velva Leg Film*, which had rated consistently high in the past four years. Five bottles (three different shades)—two 5-ounce bottles and three 12-ounce bottles—were tested this season. One 12-ounce bottle of *Sun Beige* was very bad—it was difficult to apply, dried very slowly, and looked chalky and streaky; two other bottles of *Sun Beige* gave a light, powdery covering. One bottle of *Sun Copper* streaked, and the bottle of *Sun Bronze* gave a rather thin covering. None water-spotted, but all rubbed off more or less.

For those who have not used them before, the following directions for the use of liquid leg make-up will be helpful:

1. Make sure that legs are hair-

free and dry; use a razor or a depilatory.

2. Spread a piece of newspaper under your feet to keep the bathroom floor clean. Pour a small amount of the lotion into the cupped palm and smooth it on in long, even strokes from the foot to above the knee. Be sure to fill in the hollows around the ankle, heel and knee, and behind the knee. Keep stroking lightly until the coat is almost dry, then allow it to dry thoroughly. Buffing with the hands or with a soft cloth after the make-up has dried will remove any powdery film and impart a slight sheen to the "stockings."

3. If you are caught in a shower, be very careful not to touch or rub the make-up while it is wet.

4. Wash leg make-up off with soap and warm water before retiring. The best of them is not guaranteed against rubbing off on your sheets while you're asleep. Save your towels and bedclothes by doing a thorough washing job.

Ratings are in order of increasing cost within each group. Figures in parentheses represent cost per ounce. Prices are exclusive of the 20% Federal cosmetics tax. The amount required for a "pair of stockings" varies somewhat from brand to brand, and with the size of the area to be covered, but in general, one ounce is enough for three to four applications.

Stocking Remover

A novelty accessory to the liquid stocking line is *Liquid Hosiery Remover*, made by John H. Breck, Inc., manufacturers of shampoos and other preparations for the hair. Tests indicated that it is similar in composition to a soapless oil shampoo (see page 180). According to a newspaper column it was "used originally by the medical profession for thorough cleaning jobs, . . . is now relabeled, made prettier and directed toward taking off leg make-up in a hurry and without mess." At 75¢ for 8 fluid ounces (9.4¢ per ounce), it is a rather expensive way to remove leg make-up. Any liquid soap or shampoo may be used in the same manner—poured into the palm of the hand, rubbed onto the leg make-up and rinsed thoroughly with water—with the same results and with less expense.

ACCEPTABLE

The following brands had good appearance and did not rub off or water-spot:

Filene's Own Leg Make-Up (Wm. Filene's Sons Co., Boston). 89¢ for 1 pt. (5.6¢). Available at Filene's Dep't Store, Boston.

Miner's Leg Make-Up, Copper Beige and Light Beige (Miner's, Inc., NYC). 25¢ for 3 oz. (8.3¢). Not the same as **Miner's Liquid Make-Up for the Legs**, listed below under "Not Acceptable." Available nationally.

Macy's Hose-Tex, Cocoa and Pongee (R. H. Macy & Co., NYC). \$1.03 for 12 oz. (8.6¢). Not the same as **Macy's Liquid Hose-Tex**, listed below under "Not Acceptable." Available at Macy's Dep't Store, NYC.

Rose Laird Leg Tone, Cinnabar, Light Rusglo and Rusglo (Rose Laird, NYC). 94¢ for 8 oz. (11.8¢). Spotty national distribution.

Alexandra de Markoff Cosmetic Stocking, Dark Sheer and Light Sheer (Alexandra de Markoff Salon, NYC). \$1 for 6 oz. (16.7¢). Available nationally.

Charles of the Ritz Leg Make-up, Mirage and Gossamer (Charles of the Ritz, NYC). \$1 for 6 oz. (16.7¢). Available nationally.

Avon Leg Make-up, Golden Tan (Avon Products Inc., NYC). 69¢ for 4 oz. (17.3¢). Available nationally through representatives.

VARIABLE

(Different colors in the same brand did not show the same characteristics.)

Dorothy Gray Leg Show (Dorothy

Gray, Ltd., NYC). \$1 for 10 oz. (10¢). Two bottles of *Suntone* tested; one gave good appearance, the other fair; both rubbed off. Two bottles of *Special Blend* tested; both gave good appearance, did not rub off, and did not water-spot.

Chiffon Liquid Hosiery (Primrose House, NYC). \$1 for 6 oz. (16.7¢). Two bottles of *Bandana* tested; both gave good appearance, and did not rub off but water-spotted. Two bottles of *Primrose Tan* tested; both gave fairly good appearance, did not rub off, and did not water-spot.

NOT ACCEPTABLE

(For the reasons stated)

Miner's Liquid Make-up for the Legs, Golden Mist (Miner's, Inc.). 49¢ for 6 oz. (8.2¢). Good appearance and did not rub off, but water-spotted.

Macy's Liquid Hose-Tex, Pongee (R. H. Macy & Co.). 74¢ for 8 oz. (9.3¢). Rubbed off and water-spotted.

Tussy Show-Off, Medium Shade (Lehn & Fink Prod. Corp., Bloomfield, N. J.). 50¢ for 6 oz. (8.3¢). Good appearance and did not water-spot, but rubbed off.

Velva Leg Film, Sun Bronze, Sun Beige and Sun Copper (Elizabeth Arden, NYC). \$2 for 12 oz. (16.7¢); \$1 for 5 oz. (20¢). Appearance rather thin and powdery with little covering power; one bottle of *Sun Beige* dried very slowly and resulted in white, chalky streaks; *Sun Copper* also streaked. Did not water-spot, but rubbed off slightly.

SUNBURN PREVENTIVES

The protection you get depends on the cream you use and the other precautions you take

CU's tests of sunburn preventives this season were by way of seasonal check-ups of the brands tested last Summer and found to give good protection at that time. Of the 21 brands so re-tested, all except one—*Perfection Sunburn Lotion*—were found still to give good protection, though there were some relatively minor changes in the degree of protection given. *Helena Rubinstein Suntan Cream*, which was sold in the form of a heavy lotion last season, was found by test last year to give "full protection" from sunburn. This year's product, sold under the same name, was found to be a non-greasy cream; it gave only "partial protection" against the sun.

The terms "full protection" and "partial protection" are, of course, relative. Sunburn preventives—even the best of them—cannot be expected to afford protection during prolonged exposure. Furthermore, they wash off with perspiration and in swimming. To be completely safe they should be reapplied every hour or so, and certainly after every contact with water.

Sunburn preventives are made in three forms—oils, lotions and creams. Many users find oils messy to use, as they remain on the skin surface, and encourage sand and dirt to adhere. The oils have an advantage, however; they do not wash off as easily as do the water-soluble lotions and creams.

The effectiveness of most sunburn preventives depends on a chemical "sun screen" which filters out a greater or lesser portion of the invisible ultraviolet light rays which cause burning and tanning. But don't be misled by claims which promise you "tan without burn." The tan-producing rays of the sun are very similar to the burning rays of the sun, and no practical means has been devised to separate the two completely, chemically or mechanically.

Anyone who has ever been exposed to sunlight without protection has a fairly good idea of his own skin's ability to take it. For a person whose skin is normally somewhat resistant to sunburn, a product which gives partial protection may be adequate; a person whose skin is fair with relatively little pigment would be wise to use a product which gives "full" protection and to re-apply it every hour or so.

You can save yourself much pain if you keep in mind these points: The faint tinge of pink after an hour's exposure to sunshine can become an angry, painful, red burn a few hours later. A beach umbrella, an awning or other mechanical screen against the direct rays of the sun does not screen out the ultraviolet rays reflected by water and sand. An overcast day does not mean you are safe from sunburn, for the burn-causing ultraviolet can penetrate the mist.

Besides offering protection from the sun, a good sunburn preventive should have other characteristics: it should not stain clothing with which it comes in contact; it should have satisfactory odor and color; it should spread easily and evenly; and it should not be irritating to the skin. Some persons may be sensitive to one or more of the ingredients of a particular sunburn preventive; if the brand you choose irritates your skin wash it off immediately and try another brand instead.

HOW CU TESTED

As in the past, CU technicians examined the sunburn preventives both by laboratory and by use tests.

The laboratory tests consisted of measuring the relative absorption of ultraviolet light by each brand, determination of acidity or alkalinity (pH measurement), and tests for staining of wool, silk, cotton, viscose and acetate rayon.

With the exception of *Skol*, which was somewhat acid, all the brands tested were practically neutral—

neither acid nor alkaline. However, since *Skol* was only slightly more acid than the normal reaction of skin, it was not rated down on this account.

Staining tests were done on special white test cloth woven of strands of wool, silk, cotton, viscose and acetate rayon. After the cloth was stained with the test sample and dried at 100° F. (to simulate the heat of the sun) the pieces of cloth were hand washed in warm water with neutral, unbuilt soap. A few brands (noted in ratings) were found to leave a permanent stain. You would be wise to avoid these if you wear

Mechanism of Sunburn

Of the great variety of rays given off by the sun, only the invisible ultraviolet portion of these rays contributes to tanning and burning. When the skin is exposed to bright summer sunlight for half an hour or longer, dilation of the minute vessels of the exposed area results and shows up as erythema (reddening of the skin). The intensity of the redness depends not only on the length of exposure, but also on type of skin—amount of pigmentation and previous exposure—and intensity and nature of sunlight striking the skin—direction of the rays and amount of scattering or reflection from clouds and bright surfaces, such as sand and water.

After a few days the erythema tends to fade and be replaced by "suntan." The "suntan" is the result of rearrangement and increase of the pigment "melanin" in the epidermis, and the degree of tanning depends on the amount of pigmentation of the skin of the individual. In addition, subsequent exposure to sun tends to darken the melanin already present in the skin.

Though this tanning may have some effect in making the skin less susceptible to sunburn, investigations have shown that ultraviolet radiation causes thickening of the horny layer of the skin and this thickening plays a major role in determining the relative immunity to sunburn after previous exposure. This "immunity" is at a maximum about one week after exposure and normal sensitivity returns about 50 to 60 days after exposure.

a light-colored bathing suit or beach robe.

Ultraviolet absorption was rated by passing ultraviolet light through a measured, thin film of the sunburn preventive and focusing on a fluorescent screen. The amount of ultraviolet light penetrating the film determined tentative ratings as "good protection," "partial protection" and "no protection."

In addition to the laboratory test for screening, actual use tests were done on four "guinea pigs." The backs of three persons and the midriff of a fourth were marked off into squares, and each brand of sunburn lotion was applied to one of the marked areas on each person. Two squares were left exposed with no sunburn preventive, and two squares were covered with an opaque material. The test area was then exposed to June noonday sun for periods ranging from one to one and one-half hours. The arrangement of the different brands of creams was "staggered" so that the brands were spotted on different portions of the exposed areas. "Readings" were made several hours after exposure, when the redness of the burned portions had fully developed.

Ratings were based mainly on the results of the use tests in terms of "good protection," "partial protection" and "no protection." *Keep in mind, however, that no product can be counted on to do a good job of protection, unless used with discretion. Application of a good preventive every hour or so and after every swim, plus gradually increasing doses of sunshine, are your best insurance against painful sunburn.*

Ratings are in order of increasing cost within each group. Figures in parentheses represent cost per ounce. Prices are exclusive of 20% Federal tax. Note comments as to staining of fabric.

ACCEPTABLE GOOD PROTECTION

Gaby Greaseless Suntan Lotion (Gaby Inc., Philadelphia). 49¢ for 4 oz. (12.3¢). Stained wool very slightly. Available nationally.

Tussy Emulsified Sun-Tan Lotion (Lehn & Fink Products Corp., Bloomfield, N. J.). \$1 for 8 oz. (12.5¢). Stained wool. Available nationally.

Jan (Jantzen Co., Portland, Ore.). 90¢ for 6 oz. (15¢).

Dorothy Gray Suntan Lotion (Dorothy Gray Ltd., NYC). \$1 for 6 oz. (16.7¢). Available nationally.

Primrose House Sun Screen Lotion

(Primrose House, NYC). \$1 for 6 oz. (16.7¢). Available nationally.

Nutan Lotion (Lenthéric, NYC). \$1 for 5 oz. (20¢). Stained wool slightly. Available nationally.

Avon Sun Cream (Avon Products Inc., NYC). 85¢ for 4 oz. (21.3¢). Available nationally through representatives.

Marie Earle Sun Tan Lotion (Rallet Corp., NYC). \$1 for 4.7 oz. (21.3¢). Stained wool and silk; stained cotton slightly. Available nationally.

Squibb Sunburn Cream (E. R. Squibb & Sons, NYC). 50¢ for 1 1/4 oz. (28.6¢). Available nationally.

Jacqueline Cochran Suntan Lotion (Jacqueline Cochran, Roselle, N.J.). \$1.75 for 6 oz. (29.2¢). Available nationally.

Dorothy Gray Sunburn Cream (Dorothy Gray Ltd.). \$1 for 3 1/4 oz. (30.7¢). Available nationally.

Germaine Monteil Tan-Pruf Lotion (Germaine Monteil, NYC). \$3.50 for 8 oz. (43.8¢). Available nationally.

Ardena Sun-Pruf Cream, Invisible (Elizabeth Arden, NYC). 50¢ for 1 1/8 oz. (44.4¢). Available nationally.

PARTIAL PROTECTION

Macy's Scented Suntan Oil (R. H. Macy

& Co., NYC). 89¢ for 8 oz. (11.1¢). Available at Macy's Dep't Store, NYC.

Skol (Skol Co., NYC). \$1 for 6 1/4 oz. (16¢). Also available for 79¢. Available nationally.

Primrose House Sun Screen Oil (Primrose House). \$1 for 6 oz. (16.7¢). Available nationally.

Helena Rubinstein Suntan Cream (Helena Rubinstein, Inc., NYC). \$1 for 4 oz. (25¢). Stained wool. Available nationally.

Smoothtan Cream (Charles of the Ritz, NYC). \$1 for 4 oz. (25¢). Available nationally.

Coty Suntan Oil (Coty, NYC). \$1 for 3 1/4 oz. (26.7¢). Available nationally.

Lenthéric Sun Oil (Lenthéric). \$1.25 for 4 oz. (31.3¢). Available nationally.

NOT ACCEPTABLE

The following gave little or no protection against sunburn:

Perfection Sun Burn Lotion (Walgreen Co., Chicago). 50¢ for 3 1/4 oz. (13.3¢). Recommended also as a "soothing, cooling lotion . . . for minor sunburn." Stained wool and silk; stained cotton very slightly.

The type of shampoo you should use depends on your scalp condition and the kind of water in your locality.

SOAP AND SOAP-TYPE SHAMPOOS

As indicated above, most of the shampoos being sold are solutions of soap. Soap emulsifies the oil and dirt on the hair and scalp and is washed off in the rinsing. In soft water a well formulated soap shampoo is probably as efficient a cleanser for the hair and scalp as any shampoo yet devised. In hard water areas, however, practically all soaps will form curd, which will be difficult to rinse out and will leave a dull sticky scum on the hair. A vinegar or lemon rinse will dissolve most of this scum, however.

The oils used in shampoos are usually coconut, palm, olive and similar vegetable oils. Coconut oil soap is highly soluble and lathers freely, but some people may find it irritating. For that reason, coconut oil is often mixed with other oils such as olive, castor, corn, peanut, soybean, etc., before saponification. If the coconut oil is hydrogenated before being made into a soap, it is less frequently irritating and gives a longer-lasting foam.

Soap is made by combination of a fat or oil with an alkali or combination of alkalis—caustic soda or potash, sodium or potassium carbonate, or ammonia compounds like triethanolamine. Triethanolamine and similar soaps are more nearly neutral than sodium or potassium soaps, but authorities are inclined to believe that for normal skin, the alkaline reaction of a good soap may safely be ig-

Hair Shampoos

Tests of 95 brands show differences among brands and types, but the greatest difference among them is the price

Of 95 shampoos examined by CU chemists, about three quarters (74 brands) were liquid soaps or soap-type shampoos; nine were soapless shampoos of the lathering type; six were the latherless soapless type; two were a combination of the latherless soapless type with a foaming agent; and four were creams—one packed in a collapsible tube and the other three in jars.

No matter what the label says, no matter what the radio announcer says, no matter what you read in the newspaper, a shampoo has only one function—to cleanse the scalp and hair effectively and economically, and with as little harm to the skin and hair as possible.

Extravagant claims of "nourishing the hair roots" and "feeding the scalp" which sold many shampoos a few years ago are not so much in evidence today. However, there is still *Gold Leaf Shampoo* by Kajol with minute flakes of gold leaf certified to be "23-carat pure" floating in it. The label claims no special properties for the gold. But CU tech-

nicians advise that it won't be worth the effort to put an extra strainer into your drain for catching any stray gold flakes that may wash off in the rinse. Even at the price of gold today, it would take a great many shampoos before you could retrieve the cost of the strainer.



Tests for pH were made to determine the presence of free acid or alkali.

nored. For those who are alkali-sensitive, those shampoos containing over 0.05% free alkali are listed separately in the "Acceptable" list. None of the soaps in this list were judged too alkaline for most individuals.

The list of substances which may be added to soap shampoos for one reason or another is long. We shall discuss only a few.

ALCOHOL in small amounts may be added to keep the solution clear, particularly when it is chilled. In larger amounts, and with addition of other medicaments, alcohol is used in "dandruff remover" shampoos. Alcohol has a drying effect on the skin, and shampoos containing it should not be used on dry scalps. On the other hand, shampoos containing alcohol may be helpful in relieving oily scalp conditions.

PYROPHOSPHATES, tetraphosphates and other wetting agents may be added to clarify the soap solution and make it more efficient and less curd-forming in hard water.

SULFATED OILS (called sulfonated by the trade) may be added to thicken soap shampoos. Since the sulfated oils used contain some free oil, they are often used as superfatting agents for the alkali in the soap. Soap shampoos containing sulfated oils of this type are sometimes called "oiled," "oil shampoo," "lathering oil shampoo," or "shampoo for dry hair."

TAR SHAMPOOS are of questionable therapeutic value, but some consumers like the "clean, medicinal" odor. In fact, some shampoos have "tar odor" without any tar; others contain tar.

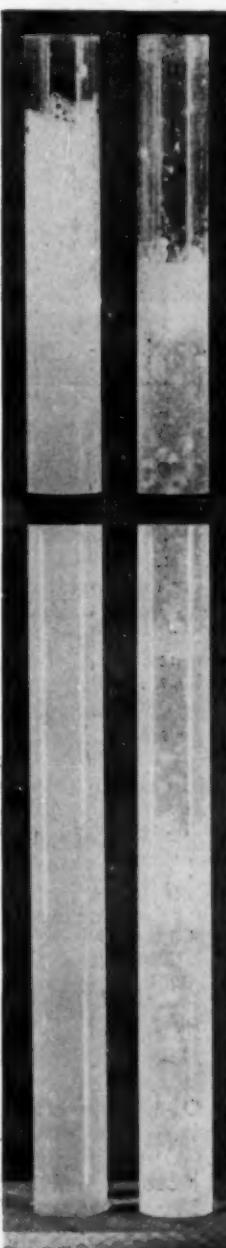
To sum up: For normal hair and scalp, any one of the soap shampoos will do an efficient job with soft or slightly hard water. In hard water areas, those soap shampoos which do not form curd or form only slight curd (see ratings) will also be effective. A soap shampoo containing alcohol may be helpful in correcting too oily hair and scalp. For dry hair and scalp conditions, a soap shampoo containing no free alkali and containing some superfatting substance like a sulfated oil may be found beneficial.

SOAPLESS SHAMPOOS

Soapless shampoos are of two types—lathering and non-lathering. Both types are neutral or slightly acid, and may be used by persons sensitive to alkalis. The lathering shampoos in this group, such as sulfated alcohols,

are excellent detergents and are particularly good for use in hard water areas, since they do not precipitate the curd-forming elements in hard water. As a result of their excellent detergency, however, they sometimes remove too much of the natural oil of the hair and scalp, and may be too drying and irritating. The addition of mineral oil or other oil may counteract the drying tendency.

The non-lathering type is usually a mixture of sulfonated (or sulfated) oils with mineral oil, and may be beneficial for dry scalp and hair.



CURD FORMATION in hard water (right) makes some shampoos less useful in hard-water areas; but not all shampoos form a curd (left).

However, they may also be irritating to some persons. Since many consumers regard a lather as an indication of detergency, some manufacturers may add a foaming agent to make a "lathering soapless oil shampoo." Actually, the cleansing action of these latherless shampoos is about equal to that of a soap shampoo. These shampoos may or may not form curd in hard water (see ratings).

CREAMS

Something new has been added to the shampoo market. Four of the 95 brands of shampoos tested were creams rather than liquids. These may be combinations of soap and soapless detergents, or they may be modified shaving creams. Though they are not necessarily more efficient than the liquid soaps or soapless shampoos in cleansing the hair and scalp, some persons may find them more convenient to use.

SHAMPOOING THE HAIR

How often to shampoo is not a question which can be answered definitely. It depends on the condition of your hair—is it oily or is it dry?—and on the environment in which you live—is it dusty and sooty, or relatively free from dust? Ordinarily, a weekly shampoo is sufficient to keep the hair and scalp clean. Persons with excessively oily hair or those who live in dusty localities may require more frequent shampoos; persons with normal or dry hair in relatively soot-free localities may get by for longer periods.

Most shampoo labels give general directions, but here are a few important facts to remember to get best results:

- Brush your hair first; this removes loose dandruff and dirt.
- Rinse the hair and scalp with warm water before applying shampoo, to soften any hardened or greasy matter.
- Use a shower stream or spray if possible so that clean water is always doing the rinsing.
- Use just enough shampoo to work up a lather (or enough to cover the scalp if you are using a latherless shampoo) and devote some time to this. Massaging the scalp will help loosen the dirt.
- Wipe off as much of the lather as possible before rinsing, then rinse thoroughly.
- Lather once or twice again,

rinsing in between latherings, and make sure that all the shampoo is completely rinsed out. The last rinse may be in lukewarm or cold water.

• A lemon or vinegar rinse will remove any dulling film left after using a soap shampoo in a hard water area.

HOW CU TESTED

CU examined the shampoos for reaction with hard water, percentage free alkali, and pH (an indication of acidity or alkalinity).

All brands which did not form curd with hard water are so noted in the ratings. Those brands with free alkali over 0.05% are listed separately but are considered "Acceptable" for most persons. The sulfated alcohols and oils were found to be neutral or slightly acid, and the soaps were all on the alkaline side. No brands, however, were considered "Not Acceptable" because of either excessive alkali or acid.

Ratings are in order of increasing cost within each group. Figures in parentheses represent cost per fluid ounce. One ounce is usually enough for a shampoo, but some "concentrated" shampoos may require less.

Soap & Soap-Type

ACCEPTABLE

The following formed curd in very hard water, unless otherwise noted:

Macy's Castile Soap Shampoo (R. H. Macy & Co., NYC). 22¢ for 8 oz. (2.8¢). Available at Macy's Dep't Store, NYC.

Macy's Coco-Vegetable Oils Soap Shampoo (R. H. Macy & Co.). 49¢ for 1 pt. (3.1¢). Available at Macy's Dep't Store, NYC.

Louise Paige Castile Soap Shampoo (Perfumer's Guild, NYC). 49¢ for 1 pt. (3.1¢). Available on East Coast.

H-A-G Liquid Shampoo (Rolloff Distributing Co., Los Angeles). 29¢ for 8 oz. (3.6¢). Labeled 60¢. Available at Joyce J. Ball Co., Los Angeles.

Filene's Own Vegetable Oil Shampoo (Wm. Filene's Sons Co., Boston). 59¢ for 1 pt. (3.7¢). Formed heavy curd in hard water although label stated, "May be used in hard or soft water." Available at Filene's Dep't Store, Boston.

Bullock's Gold Seal Castile Shampoo (Bullock's, Los Angeles). \$1.25 for 1 qt. (3.9¢).

Co-op Shampoo (National Cooperatives Inc., Chicago). 63¢ for 1 pt. (3.9¢). Contained alcohol. Available nationally at Co-op Stores.

Macy's Olive, Vegetable & Coconut Oil Soap Shampoo (R. H. Macy & Co.). 32¢ for 8 oz. (4¢). Available at Macy's



THERE'S GOLD in that shampoo, but nobody knows just why.

Dep't Store, NYC.

42 Castile Shampoo (42 Products, Ltd., Los Angeles). 49¢ for 12 oz. (4.1¢). Formed only slight curd in very hard water. Available on West Coast.

Arline Castile Shampoo (Stix, Baer & Fuller, St. Louis). 69¢ for 1 pt. (4.3¢).

Consumers' Special Foamy Shampoo for Oily Hair, Pine Bouquet (Special Formula Corp., NYC). 35¢ for 7 1/4 oz. (4.5¢). Formed only slight curd in very hard water. Available nationally.

Wards Foamy Oil Shampoo, Cat. No.—6613 (Montgomery Ward). 37¢ plus postage for 8 oz. (4.6¢). Formed only slight curd in very hard water. Available by mail order.

Schenley Olive Oil Shampoo (Joseph Horne Co., Pittsburgh). 75¢ for 1 pt. (4.7¢). Available at Joseph Horne Co., Pittsburgh.

Schenley Shampoo Made from Cocoanut Oil (Joseph Horne Co.). 75¢ for 1 pt. (4.7¢). Available at Joseph Horne Co., Pittsburgh.

Aimé Tar Shampoo for Oily Scalp (Aimé, NYC). 29¢ for 6 oz. (4.8¢). Available nationally.

Aimé Olive Oil Shampoo for Dry Scalp (Aimé). 29¢ for 6 oz. (4.8¢). Available nationally.

Revelation Cocoanut Oil Shampoo (Stineway Drug Co., Chicago). 39¢ for 8 oz. (4.9¢).

Macy's Special Shampoo for Dry Hair (R. H. Macy & Co.). 39¢ for 8 oz. (4.9¢). Available at Macy's Dep't Store, NYC.

Betty Woods Shampoo (Betty Woods Laboratories, Hollywood). 83¢ for 1

pt. (5.2¢). Available in southern California.

SVB Castile Shampoo (Scruggs-Vandervoort-Barney, St. Louis). \$1.69 for 1 qt. (5.3¢).

42 Eucalyptus Oil Shampoo (42 Products, Ltd.). 89¢ for 1 pt. (5.6¢). Available on West Coast.

Larkin Tar Shampoo (Larkin Co., Buffalo). 35¢ plus postage for 6 oz. (5.8¢). Available by mail order.

Larkin Egg Shampoo (Larkin Co.). 35¢ plus postage for 6 oz. (5.8¢). Available by mail order.

Palmolive Shampoo (Colgate-Palmolive-Peet Co., Jersey City). 23¢ for 4 oz. (5.8¢). Available nationally.

Woodbury Cocoanut Oil Castile Shampoo (John H. Woodbury, Inc., Cincinnati). 39¢ for 6 1/2 oz. (6¢). Labeled 50¢. Available nationally.

Woodbury Tar Shampoo for Oily Scalp (John H. Woodbury, Inc.). 39¢ for 6 1/2 oz. (6¢). Labeled 50¢. Available nationally.

Arline Shampoo Made from Cocoanut Oil (Stix, Baer & Fuller). 49¢ for 8 oz. (6.1¢).

Arline Shampoo Tar Odor (Stix, Baer & Fuller). 49¢ for 8 oz. (6.1¢).

L. B. Foaming Shampoo (L. B. Laboratories, Inc., Hollywood). 49¢ for 8 oz. (6.1¢).

Wards Dandruff Remover Shampoo, Cat. No.—6514 (Montgomery Ward). 37¢ plus postage for 6 oz. (6.2¢). Contained alcohol. Available by mail order.

Oliver's Yucca Root Lemon Shampoo (Oliver's, San Francisco). \$1 for 16 oz. (6.3¢).

Oliver's Yucca Root Olive Shampoo (Oliver's). \$1 for 16 oz. (6.3¢).

M-H Mint Shampoo for Normal Scalps (Matilda Hartman's Viennese Formulae, San Francisco). 50¢ for 8 oz. (6.3¢).

M-H Medicated Shampoo for Dry Scalps and Hair (Matilda Hartman's Viennese Formulae). 50¢ for 8 oz. (6.3¢).

Cas-O-Lan Shampoo and Oil Treatment (Halgar, Inc., Chicago). Montgomery Ward Cat. No.—6652. 39¢ plus postage for 6 oz. (6.5¢). Formed only slight curd in very hard water. Available by mail order.

Wildroot Cocoanut Oil Shampoo (Wildroot Co., Buffalo). 39¢ for 6 oz. (6.5¢). 5% alcohol. Available nationally.

Walgreen's Lemon Scented Shampoo (Walgreen Co., Chicago). 39¢ for 6 oz. (6.5¢). Available nationally at Walgreen Stores.

Walgreen's Tar Scented Shampoo (Walgreen Co.). 39¢ for 6 oz. (6.5¢). Available nationally at Walgreen Stores.

Hennafoam Gleam Cocoanut Oil Shampoo (Hennafoam Co., NYC). 39¢ for 6 oz. (6.5¢). Available nationally.

Kreml Shampoo (R. B. Semler, Inc., New Canaan, Conn.). 39¢ for 6 oz. (6.5¢). No curd formation in hard water. Available nationally.

Marchand's Castile Shampoo (Charles Marchand Co., NYC). 29¢ for 4 oz. (7.3¢). Available nationally.

Mulsified Cocoanut Oil Shampoo (R. L. Watkins Co., NYC). 33¢ for 4½ oz. (7.3¢). Formed only slight curd in very hard water.

Arlene Oiled Shampoo (Stix, Baer & Fuller). 59¢ for 8 oz. (7.4¢). No curd formation in hard water.

Mar-o-Oil Super-Foamy Type Shampoo (Marrow's Inc., Chicago). 69¢ for 9 oz. (7.7¢).

Fitch's Saponified Cocoanut Oil Shampoo (F. W. Fitch Mfg. Co., Des Moines). 47¢ for 6 oz. (7.8¢). Labeled 50¢. Formed only slight curd in very hard water. Available nationally.

Laco Castile Soap Shampoo (Laco Products, Inc., Baltimore). 39¢ for 5 oz. (7.8¢).

Ogilvie Sisters Castile Soap Shampoo (Ogilvie Sisters Scalp Specialists, NYC). \$1.25 for 1 pt. (7.8¢). Formed only slight curd in very hard water. Available nationally.

Packer's Shampoo with Olive Oil (Packer's Tar Soap, Inc., Mystic, Conn.). 39¢ for 5 oz. (7.8¢). Available nationally.

Packer's Shampoo with Pine Tar (Packer's Tar Soap, Inc.). 39¢ for 5 oz. (7.8¢). Formed only slight curd in very hard water. Available nationally.

Silque Shampoo (Langlois, Boston). 49¢ for 6 oz. (8.2¢). Available nationally.

Klenzo Shampoo (United Drug Co., Boston). 50¢ for 6 oz. (8.3¢). Available nationally.

Studio Girl Shampoo Formula C for Dry Hair (Studio Girl Shampoo Co., Hollywood). 75¢ for 8 oz. (9.4¢). Available nationally.

Fitch's Dandruff Remover Shampoo (F. W. Fitch Mfg. Co.). 59¢ for 6 oz. (9.8¢). Contained saponified coconut oil and alcohol. Available nationally.

Avon Liquid Shampoo (Avon Products Inc., NYC). 59¢ for 6 oz. (9.8¢). Available nationally through representatives.

Mary Scott Rowland Castile Soap Shampoo (Mary Scott Rowland, Ltd., NYC). 60¢ for 6 oz. (10¢). Formed only slight curd in very hard water. Available nationally.

Mary Scott Rowland Cocoanut Oil Soap Shampoo (Mary Scott Rowland, Ltd.). 60¢ for 6 oz. (10¢). Available nationally.

Prim Shampoo (Primrose House, NYC). \$1 for 10 oz. (10¢). Available nationally.

Daggett & Ramsdell Perfect Shampoo (Daggett & Ramsdell, NYC). 60¢ for 6 oz. (10¢). Available nationally.

Barbara Gould Shampoo (Barbara Gould, NYC). 50¢ for 4½ oz. (11.8¢). Available nationally.

Admiración Foamy Shampoo (Admiracion Laboratories, Harrison, N. J.). 49¢ for 4 oz. (12.3¢). Formed only slight curd in very hard water.

Gold Leaf Shampoo (Kajol, Inc., San Francisco). 79¢ for 6 oz. (13.2¢). Formed only slight curd in very hard

water. Available in West and Penna. **Herbal Shampoo for Normal or Oily Scalp** (Helena Rubinstein, Inc., NYC). \$1 for 6 oz. (16.7¢). Formed only slight curd in very hard water. Available nationally.

Herbal Shampoo for Dry Scalp (Helena Rubinstein, Inc.). \$1 for 6 oz. (16.7¢). Available nationally.

Beauty Counselor Shampoo Formula No. 1 (Beauty Counselors Inc., Grosse Pointe, Mich.). \$1.80 for 8 oz. (22.5¢). Available by mail order.

The following soap-type shampoos contained more than 0.05% free alkali:

Louise Paige Tar Soap Shampoo (Perfumer's Guild). 49¢ for 1 pt. (3.1¢). Available on East Coast.

Consumers' Special Foamy Shampoo, Natural (Special Formula Corp.). 35¢ for 7½ oz. (4.5¢). Formed only slight curd in very hard water. Available nationally.

Schenley's Shampoo Tar Odor (Joseph Horne Co.). 75¢ for 1 pt. (4.7¢). Available at Joseph Horne Co., Pittsburgh.

Aimé Castile Shampoo (Aimé). 29¢ for 6 oz. (4.8¢). Available nationally.

Barbara Lane Castile Soap Shampoo (Whelan Drug Co., NYC). 39¢ for 8 oz. (4.9¢). Formed only slight curd in very hard water. Available nationally at Whelan Stores.

Walter's Shampoo and Dandruff Remover, Cat. No.—6167 (Sears, Roebuck). 39¢ plus postage for 8 oz. (4.9¢). Contained alcohol. Available by mail order.

Walgreen's C.O. Shampoo (Walgreen Co.). 39¢ for 6 oz. (6.5¢). Available nationally at Walgreen Stores.

Conti Castile Shampoo (Conti Products Corp., NYC). 37¢ for 5 oz. (7.4¢). Labeled 50¢. Formed only slight curd in very hard water.

Shontex Shampoo (Shontex Co., Santa Monica, Calif.). 69¢ for 8 oz. (8.6¢). Formed only slight curd in very hard water.

Delettrez Light Weight Egg Shampoo (Delettrez, NYC). \$1 for 4 cakes. Weight not stated; contents found to weigh approximately 5 oz. (20¢). Sears, Roebuck catalog stated, "6 to 10 shampoos in one cake." Available nationally.

Soapless Shampoos

ACCEPTABLE

The following did not form curd in hard water, unless otherwise noted:

LATHERING TYPE

(Sulfated alcohols or similar compounds)

Wards Glisteen, Cat. No.—6615 (Montgomery Ward). 59¢ (tax included) plus postage for 6 oz. (8.2¢). Available by mail order.

Sears Approved Soapless Shampoo, Cat. No.—6151 (Sears, Roebuck). 69¢ plus postage for 8 oz. (8.6¢). Available by mail order.

Co-op Soapless Shampoo (National Co-operatives, Inc.). 69¢ for 7½ oz. in Nebraska (9.2¢); 79¢ in New York (10.5¢). Available nationally at Co-op Stores.

Ann Meredith's Hairglo Shampoo (Vonett Sales Co., Hollywood). 79¢ for 8 oz. (9.9¢). Available on West Coast.

Drene Shampoo (Procter & Gamble, Cincinnati). 79¢ for 6 oz. (13.2¢); 49¢ for 3 oz. (16.3¢). Available nationally.

Special Drene Shampoo with Hair Conditioner (Procter & Gamble). 79¢ for 6 oz. (13.2¢); 49¢ for 3 oz. (16.3¢). Available nationally.

Halo Shampoo (Colgate-Palmolive-Peet Co.). 49¢ for 3½ oz. (14¢); 23¢ for 1½ oz. (15.3¢). Available nationally.

Lano Shampoo Dandruff Remover (L. G. Lab, Oakland, Calif.). \$1 for 6 oz. (16.7¢). Available in West.

M. Louis Eggnog Shampoo, Concentrated (M. Louis Products Co., NYC). \$1 for 2 oz. (50¢). Formed slight curd in very hard water.

NON-LATHERING TYPE

(Sulfated oils and similar products)

Goldblatt's Bond Soapless Shampoo (Goldblatt's, Chicago). 17¢ for 6 oz. (2.8¢). Available at Goldblatt Stores, Chicago.

Lustertone Oil Shampoo (Carrel, Ltd., Chicago). 39¢ for 6 oz. (6.5¢).

Mar-o-Oil Shampoo (Marrow's, Inc.). 39¢ for 6 oz. (6.5¢).

Admiración De Luxe Shampoo (Admiracion Laboratories). 49¢ for 6 oz. (8.2¢).

Ogilvie Sisters Latherless Shampoo, Pine Aroma (Ogilvie Sisters Scalp Specialists). 75¢ for 8 oz. (9.4¢). Available nationally.

Ardena Soapless Oil Shampoo (Elizabeth Arden, NYC). \$1.25 for 6 oz. (20.8¢). Available nationally.

LATHERING OIL SHAMPOOS

Fij-Oil Soapless Lathering Oil Shampoo (Consolidated Hair Goods Co., Chicago). Montgomery Ward Cat. No.—6340. 60¢ (postpaid) for 6 oz. (10¢). Available by mail order.

Tussy Flozor Lathering Oil Shampoo (Lehn & Fink Products Co., Bloomfield, N. J.). \$1 for 6 oz. (16.7¢). Formed only slight curd in very hard water. Available nationally.

CREAMS

Balm Barr Lanolin Creme Shampoo (G. Barr & Co., Chicago). \$1 for 6 oz. (16.7¢). No curd formation in hard water.

Rayve Creme Shampoo (Raymond Laboratories, Inc., St. Paul). 59¢ for 2½ oz. (21.4¢). No curd formation in hard water. Available nationally.

Lustre-Creme (Kay Daumit, Chicago). \$1 for 4 oz. (25¢). Formed heavy curd in hard water. Available nationally.

Trellis Lanolated Shampoo (Roycemore Toiletries, Inc., Chicago). \$1 for 4 oz. (25¢). No curd formation in hard water.

FROZEN FOODS

Report on a nation-wide survey of 44 brands of frozen peas, lima beans, strawberries and raspberries

There is no magic that makes a frozen food better—or worse—than the same food bought fresh or canned. As with other types of food, the quality of a frozen product is the end result of the quality of the ingredients plus the care taken in every step of processing until it reaches the table. And as a matter of fact, with the frozen food industry in the state of flux in which it finds itself today, buyers of frozen foods must look sharp if they are to avoid below-par products.

In an effort to obtain a general, nation-wide picture of the frozen food market, CU surveyed ten cities and sampled from each of them all available brands of four widely-sold frozen products: peas, lima beans, strawberries and raspberries. The 208 samples—representing a total of 44 different brands of frozen foods—were rushed to graders in the U. S. Department of Agriculture in each city of purchase, and were graded according to official methods immediately after receipt.

CONCLUSIONS FROM TEST

Even within the limitations of the test (it was possible to get only one or two samples of some brands)—limitations imposed by the relative scarcity of frozen foods, and by the inability of the CU shoppers to purchase samples in all the cities where a brand would be available in normal market conditions—a truly enlightening picture is presented. Here are some highlights:

- Great variation in quality prevails, not only among the various brands and the different types of food, but among different samples of the same brand and type.

- Despite the excellent adaptability of peas, lima beans, raspberries and strawberries to freezing, there was found to be a very high proportion—about 12%—of substandard packages among these products.

- Unlabeled products—that is, products which do not bear a brand

name or the name of the producer—showed a much higher proportion of substandard samples than do branded items.

The most widely distributed brand—*Birdseye*—was found to be of outstandingly high quality in CU's test. Even *Birdseye* quality was not entirely consistent, but 14 of the 19 samples tested were found to be Grade A, and none was found substandard. Four other brands deserve honorable mention: *Agen*, *Polar*, *Cedergreen* and *Booth* showed generally good quality on the basis of the limited number of samples tested. A few other brands received high scores on the samples tested, but unfortunately it was impossible to buy enough samples to draw any conclusions with respect to their over-all quality.

It is clear from the tests that the frozen food industry still has far to

go in the establishment of rigid standards for quality control. Improvement may come from several sources, including the development of special strains of fruits and vegetables which stand up well under freezing, the establishment of better control at the points of inspection, freezing and transportation, and closer attention to storage and handling at retail establishments.

The ratings below are given in greater detail than usual in CU's reports on processed foods. This is done in an attempt to present a picture of the field in addition to giving the usual buying recommendations. Though there can be no certainty in the matter, there would seem to be a reasonable probability that a brand which is consistently good with respect to the four products tested would be relatively good in other products. It would appear safer to buy the products of a concern whose production was consistently Grade A or B, for example than to purchase from one whose products varied widely from Grade A to Substandard.

Ratings are based on the U. S. Department of Agriculture's tentative standards for frozen foods, which include such considerations as flavor, color, tenderness, maturity, absence of defects, and, in the case of fruits, the amount of sugar in the syrup.

FROZEN FOOD SURVEY

Frozen foods aren't always as costly as they might seem. Although a frozen vegetable product is generally priced higher than a comparable weight of the same vegetable if bought fresh or canned, the negligible amount of waste in the frozen vegetable may make it cheaper than the fresh vegetable when it is out of season, and easier to prepare in any season. Canned vegetables are generally more economical than frozen vegetables.

The table below shows the average cost for a 12-ounce serving of *Birdseye* Green Peas and of various brands of canned peas, after they were cooked and drained. Prices for fresh peas are not given, but it can be seen from the table that when the price of fresh peas rises above 15¢ a pound, frozen peas begin to be more economical. Three packages of *Birdseye* peas, bought for this test at the price range indicated in the table, were cooked according to directions and drained before being weighed. The figures on weight loss of canned and fresh peas after cooking and draining are based on results of an experiment made by members of the Cooperative at Greenbelt, Maryland (*Reports*, August 1941).

	Purchased Weight	Purchase Price	Average Weight after cooking and draining	Average Cost per 12 oz. ready-to-serve
Frozen	12 oz.	25-30¢	10.9 oz.	30.2¢
Canned	20 oz.	13-25¢	13.7 oz.	17.5¢
Fresh	32 oz.	12.4 oz.

Nationally Available Brands

Birdseye Brand (Birdseye, Snider Inc., NYC). Nineteen samples tested; 14 Grade A, 4 Grade B, 1 Grade C.

Green Peas: 25¢ to 30¢ for a 12-oz. package. Purchased in New York City, Philadelphia, Chicago, Los Angeles, Minneapolis, Denver, Salt Lake City. Twelve packages tested; 8 Grade A, 3 Grade B, 1 Grade C (defects).

Lima Beans: 31¢ to 34¢ for a 12-oz. package. Purchased in New York City, Minneapolis, Seattle. Five packages tested; 4 Grade A, 1 Grade B.

Strawberries: 43¢ for 1-lb. package. Sliced and sweetened, with two to three parts of fruit to one part of sugar. Purchased in Minneapolis. Two packages tested; both Grade A.

Agen (Cascade Frozen Foods, Inc., Seattle). Eight samples tested; 4 Grade A, 4 Grade B.

Green Peas: 25¢ to 28¢ for a 12-oz. package. Purchased in New York City, Minneapolis. Four packages tested; all Grade B.

Raspberries: 43¢ to 50¢ for a 1-lb. package. Sweetened, with four to five parts fruit to one part sugar. Purchased in New York City, Minneapolis. Four packages tested; all Grade A.

Honor Brand (Honor Brand Frosted Foods Division of Stokely-Van Camp Inc., Oakland, Calif.). Sixteen samples tested; 3 Grade A, 10 Grade B, 2 Grade C, 1 Off-grade.

Green Peas: 25¢ to 29¢ for a 12-oz. package. Purchased in New York City, Philadelphia, Los Angeles, San Francisco, Minneapolis. Nine packages tested; 1 Grade A, 6 Grade B, 2 Grade C (tenderness and maturity).

Lima Beans: 32¢ to 34¢ for a 12-oz. package. Purchased in Philadelphia, Los Angeles, San Francisco. Five packages tested; 4 Grade B, 1 Off-grade (excessive defects).

Raspberries: 43¢ for a 12-oz. package. Sweetened, with two parts fruit to one part sugar. Purchased in Minneapolis. Two packages tested; both Grade A.

Year Round (Santa Clara Frosted Foods, Santa Clara, Calif.).

Lima Beans: 35¢ to 45¢ for a 12-oz. package. Purchased in New York City, San Francisco. Four packages tested; 2 Grade A, 2 Grade C (one because of color, one because of color and defects).

Pringle Brand (R. D. Pringle & Co., Modesto, Calif.).

Lima Beans: 37¢ to 42¢ for a 12-oz. package. Purchased in New York City, Boston, Seattle. Six packages tested; 2 Grade B, 3 Grade C (two because of color, one because of defects), 1 Off-grade (excessive defects).

Purchased in East

Fenwick (Deerfield Packing Corp., Bridgeton, N. J.).

Preparing Frozen Fruits and Vegetables

The flavor, color and texture of frozen foods can be impaired by improper defrosting. Do not thaw any more food than you intend to use at any one time, and do not attempt to refreeze food once it has been defrosted.

VEGETABLES to be cooked may be defrosted either by allowing them to stand in their closed containers outside the freezing compartment, in the refrigerator, for several hours, or by allowing them to stand at room temperature for an hour or so before cooking. Immediately after they have been defrosted, they should be cooked, with as little water as possible. Alternatively, the thawing process may be omitted if the frozen vegetables are placed in either cold or hot water and brought to a boil. While this last method saves time it has two disadvantages; it requires the use of more cooking water than the pre-thawing methods; and the vegetables at the surface of the frozen block tend to become overcooked before those at the center are finished.

Generally frozen vegetables require 10% to 25% less cooking time than fresh.

FROZEN FRUITS which have been completely thawed tend to be objectionably soft, but unthawed fruits are too hard to eat. The texture and the structure of fresh fruit is most closely approximated if the frozen fruit is allowed to thaw partially in the refrigerator, and is served before it has become completely defrosted.

Fruits to be used in baking or cooking should be thawed and handled in the same way as frozen vegetables.

Lima Beans: 34¢ to 45¢ for a 12-oz. package. Purchased in New York City, Philadelphia. Four packages tested; 2 Grade A, 1 Grade B, 1 Grade C (color).

Pratt's. Nine samples tested; 3 Grade A, 4 Grade B, 1 Grade C, 1 Off-grade.

Green Peas: 27¢ and 29¢ for a 12-oz. package. Purchased in Philadelphia. Two packages tested; 1 Grade C (tenderness and maturity), 1 Off-grade (poor color and excessive defects).

Lima Beans: 37¢ to 45¢ for a 12-oz. package. Purchased in New York City, Philadelphia, Boston. Five packages tested; 2 Grade A, 3 Grade B.

Raspberries: 54¢ for a 1-lb. package; 59¢ for a 12-oz. package (found short weight). Sweetened. Purchased in New York City. Two packages tested; 1 Grade A, 1 Grade B.

Seabrook (Deerfield Packing Corp., Bridgeton, N. J.). Six samples tested; 5 Grade B, 1 Off-grade.

Green Peas: 25¢ to 27¢ for a 12-oz. package. Purchased in New York City, Philadelphia. Three packages tested; 2 Grade B, 1 Off-grade (poor in tenderness and maturity).

Lima Beans: 36¢ and 37¢ for a 12-oz. package. Purchased in New York City, Philadelphia. Three packages tested; all Grade B.

Du Son (John H. Dulany & Sons, Fruitland, Md.).

Lima Beans: 33¢ and 34¢ for a 12-oz. package. Purchased in New York City, Philadelphia. Three packages tested; 2 Grade C (defects), 1 Off-grade (excessive defects).

Purchased in New York City

Pembroke (Pembroke Canning Co., East Pembroke, N. Y.).

Green Peas: 27¢ and 29¢ for a 12-oz. package. Two packages tested; both Grade B.

Coldseal (Quick Frozen Wholesalers, Inc., NYC).

Green Peas: 28¢ for a 12-oz. package. Two packages tested; both Grade B.

Frocraft (Frocraft Packing Corp., San Francisco).

Lima Beans: 37¢ for a 12-oz. package. One package tested; Grade B.

Garden Fresh Foods (Penguin Frozen Food Stores, NYC).

Strawberries: 55¢ for a 1-lb. package (found short weight). No label statement regarding sweetening. One package tested; Grade B.

Cortley (Cortley Frosted Foods, NYC). Four samples tested; 3 Grade B, 1 Off-grade.

Green Peas: 31¢ for a 12-oz. package. Two packages tested; both Grade B.

Lima Beans: 35¢ and 39¢ for a 12-oz. package. Two packages tested; 1 Grade B, 1 Off-Grade (excessive defects).

Gro-Pak (Growers and Packers Cooperative Canning Co., North Collins, N. Y.).

Raspberries: 55¢ for a 12-oz. package; 57¢ for a 1-lb. package. No label statement regarding sweetening. Two packages tested; 1 Grade A, 1 Off-grade (excessive defects and crushed berries).

Snowman (Snowman Frozen Food Centers). Six samples tested; 3 Grade B, 2 Grade C, 1 Off-grade.

Green Peas: 27¢ for a 12-oz. package. Two packages tested; both Grade C.

Strawberries: 35¢ for an 8-oz. package. Packed whole; no label statement regarding sweetening. Two packages tested; both Grade B.

Raspberries: 58¢ for a 1-lb. package; 33¢ for an 8-oz. package. No label

Quality Line-Up

Breakdown, by grades, of the frozen foods tested:

Green Peas (87 packages tested)

26% Grade A
53% Grade B
13% Grade C
8% Off-Grade

Lima Beans (69 packages tested)

22% Grade A
46% Grade B
17% Grade C
15% Off-Grade

Raspberries (28 packages tested)

64% Grade A
22% Grade B
14% Off-Grade

Strawberries (24 packages tested)

54% Grade A
38% Grade B
8% Off-Grade

statement regarding sweetening. Two packages tested; 1 Grade B, 1 Off-grade (poor color and character; excessive defects).

Songrea (Sterling Point Frosted Foods Co., NYC).

Lima Beans: 30¢ and 36¢ for a 12-oz. package. Two packages tested; 1 Grade B, 1 Off-grade (hard, with poor texture and tough skin after cooking).

Uco (Uco Frozen Foods Co., Newark, N. J.).

Lima Beans: 36¢ and 37¢ for a 12-oz. package. Two packages tested; both Off-grade (excessive defects).

Frostkit (Washington Packer's Inc., Sumner, Wash.).

Green Peas: 27¢ for a 12-oz. package. Two packages tested; both Off-grade (one because of poor color, one because of excessive defects).

Purchased in Philadelphia

Gresham (Gresham Berry Growers, Gresham, Ore.).

Raspberries: 33¢ for a 10-oz. package. Unsweetened. Two packages tested; both Grade A.

Hershey's (Hershey Packing Co., Seattle).

Strawberries: 50¢ for a 1-lb. package. Sliced and sweetened. One package tested; Grade A.

Valamont (National Fruit Canning Co., Seattle).

Green Peas: 28¢ for a 12-oz. package. One package tested; Grade A.

Dulany (John H. Dulany & Son, Fruitland, Md.).

Green Peas: 27¢ for a 12-oz. package. One package tested; Grade A.

Green Valley (Penn Fruit Co., Philadelphia). Four samples tested; 2 Grade A, 2 Grade B.

Green Peas: 27¢ for a 12-oz. package. Two packages tested; both Grade A.

Lima Beans: 39¢ for a 12-oz. package. Two packages tested; both Grade B.

G.B. (Gaudio Bros., Camden, N. J.).

Green Peas: 28¢ for a 12-oz. package.

Two packages tested; both Grade B.

Fenton (N. Bloom & Co. Frosted Foods, Camden, N. J.).

Lima Beans: 46¢ for a 12-oz. package.

Two packages tested; 1 Grade B, 1 Grade C (defects).

Purchased in Boston

Bodle

Green Peas: 24¢ for a 12-oz. package. Two packages tested; both Grade A.

Goldseal

Green Peas: 27¢ and 28¢ for a 12-oz. package. Two packages tested; 1 Grade A, 1 Grade B.

Purchased in West

Polar (S. A. Moffett Co., Seattle). Nineteen samples tested; 10 Grade A, 6 Grade B, 3 Grade C.

Green Peas: 22¢ to 29¢ for a 12-oz. package. Purchased in Los Angeles, San Francisco, Seattle, Minneapolis. Eight packages tested; 1 Grade A, 4 Grade B, 3 Grade C (one because of defects, two because of tenderness and maturity).

Lima Beans: 31¢ to 45¢ for a 12-oz. package. Purchased in Minneapolis, Seattle. Three packages tested; 1 Grade A, 2 Grade B.

Strawberries: 49¢ for a 1-lb. package. Whole and sliced; sweetened, with three parts of fruit to one part of sugar. Purchased in Minneapolis. Four packages tested; all Grade A.

Raspberries: 39¢ to 49¢ for a 1-lb. package. Sweetened, with five parts of fruit to one part of sugar. Purchased in San Francisco, Minneapolis. Four packages tested; all Grade A.

Cedergreen (Cedergreen Frozen Pack Corp., Wenatchee, Wash.). Fourteen samples tested; 6 Grade A, 8 Grade B.

Green Peas: 23¢ to 25¢ for a 12-oz. package. Purchased in Los Angeles, Seattle, Chicago, Minneapolis. Six packages tested; 4 Grade A, 2 Grade B.

Lima Beans: 30¢ for a 12-oz. package. Purchased in Minneapolis. Two packages tested; 1 Grade A, 1 Grade B.

Strawberries: 52¢ for a 1-lb. package. Sliced and sweetened, with four parts fruit to one part sugar. Purchased in Minneapolis. Two packages tested; both Grade B.

Raspberries: 43¢ to 52¢ for a 1-lb. package. Sweetened. Purchased in Los Angeles, Minneapolis. Four packages tested; 1 Grade A, 3 Grade C.

Pictsweet (Pictsweet Foods Inc., Mount Vernon, Wash.). Twelve samples tested; 5 Grade A, 6 Grade B, 1 Off-grade.

Green Peas: 20¢ to 24¢ for a 12-oz.

package. Purchased in Los Angeles, San Francisco, Seattle. Six packages tested; 2 Grade A, 4 Grade B.

Lima Beans: 32¢ to 37¢ for a 12-oz. package. Purchased in Los Angeles, San Francisco, Seattle. Six packages tested; 3 Grade A, 2 Grade B, 1 Off-grade (excessive defects).

Booth (Booth Fisheries Corp., Chicago). Ten samples tested; 2 Grade A, 8 Grade B.

Green Peas: 33¢ for a 12-oz. package. Purchased in Salt Lake City. Two packages tested; both Grade B.

Lima Beans: 35¢ to 50¢ for a 12-oz. package. Purchased in Minneapolis, Salt Lake City, Denver. Six packages tested; all Grade B.

Strawberries: 49¢ for a 1-lb. package. Sliced and sweetened, with three parts of fruit to one part of sugar. Purchased in Minneapolis. Two packages tested; both Grade A.

Sparklets (Selly, Farquhar & Co., Tacoma). Ten samples tested; 4 Grade A, 4 Grade B, 1 Grade C, 1 Off-grade.

Green Peas: 25¢ to 26¢ for a 12-oz. package. Purchased in Los Angeles, Minneapolis. Four packages tested; 2 Grade B, 1 Grade C (tenderness and maturity); 1 Off-Grade (poor in tenderness and maturity).

Strawberries: 52¢ to 55¢ for a 1-lb. package. Whole; sweetened, with seven parts fruit to one part sugar. Purchased in Los Angeles, Minneapolis. Four packages tested; 2 Grade A, 2 Grade B.

Raspberries: 49¢ for a 1-lb. package. Sweetened. Purchased in Seattle. Two packages tested; both Grade A.

Purchased in Western Cities

Twin Peaks (Rocky Mountain Packing Corp., Salt Lake City).

Green Peas: 27¢ and 28¢ for a 12-oz. package. Purchased in Salt Lake City. Two packages tested; both Grade B.

Witt's Med-O-Sweet (Witt's Med-O-Sweet Farms, Ossoe, Minn.).

Green Peas: 23¢ for a 12-oz. package. Purchased in Minneapolis. One package tested; Grade B.

Dewkist (Washington Packers Inc., Seattle).

Green Peas: 20¢ for a 12-oz. package. Purchased in Denver. One package tested; Grade B.

Frozent (National Dairy Products Co., NYC).

Green Peas: ??¢ for a 12-oz. package. Purchased in Chicago. One package tested; Grade B.

Penguin (Washington Frosted Foods, Inc., Seattle).

Green Peas: 28¢ and 29¢ for a 12-oz. package. Purchased in Salt Lake City. Three packages tested; 2 Grade B, 1 Grade C (tenderness and maturity).

Prime (California Consumers Corp., Los Angeles).

Lima Beans: 36¢ for a 12-oz. package. Purchased in Los Angeles. Two pack-

ages tested; 1 Grade B, 1 Grade C (color).

Northland (Northland Frozen Foods, Minneapolis).

Raspberries: 43¢ for a 12-oz. package. Sweetened, with two to three parts fruit to one part of sugar. Purchased in Minneapolis. Two packages tested; 1 Grade A, 1 Off-grade (poor color and excessive defects).

Winter Queen (Fresh Frozen Foods, Ltd., Watsonville, Calif.).

Lima Beans: ??¢ for a 12-oz. package. Purchased in Chicago. One package tested; Grade C (color).

A&P Food Stores (A&P, Minneapolis and St. Paul).

Strawberries: 57¢ for a 1-lb. package. Whole, sweetened. Purchased in Minneapolis. Two packages tested; 1 Grade B, 1 Off-grade (poor character of fruit).

Frigifoods (Bozeman Canning Co., Mount Vernon, Wash.).

Lima Beans: 37¢ for a 12-oz. package. Purchased in Los Angeles. Two packages tested; 1 Grade C (defects); 1 Off-grade (excessive defects).

Challenge (Challenge Cream and Butter Ass'n, Los Angeles).

Green Peas: 27¢ for a 12-oz. package. Purchased in Los Angeles. Two packages tested; both Off-grade (poor in tenderness and maturity).

Unlabeled Brands. Eight samples tested; 2 Grade A, 3 Grade B, 3 Off-grade.

Green Peas: 30¢ for a 14-oz. package. One package tested; Grade B.

Lima Beans: 37¢ for a 12-oz. package. One package tested; Off-grade.

Strawberries: 33¢ to 35¢ for an 8-oz. package; 55¢ for a 1-lb. package. Four packages tested; 2 Grade A, 1 Grade B, 1 Off-grade.

Raspberries: 50¢ for a 12-oz. package; 59¢ for a 1-lb. package. Two packages tested; 1 Grade B, 1 Off-grade.

slide all the way to the corners unless the eyeglasses are removed, in which case the view seen through the fixed lens may be blurred or completely out of focus.

A most important feature is a screen free from grain, since a grainy screen will show through the lighter parts of a picture.

Table viewers, another (though much more expensive) means of viewing small transparencies, will be surveyed in an early issue of the *Reports*.

ACCEPTABLE

(In estimated order of quality)

Kimac (Kimac Co., Old Greenwich, Conn.). \$3. Plastic viewer with detachable handle. Adjustable-focus lens. Less magnification than with most other viewers. Screen grainless, but less bright than others.

The Greatest Show on Earth (Kimac Co.). \$1.89. Plastic viewer with detachable handle. Adjustable-focus lens. Image cut off slightly at corners; some grain in diffusing screen. This viewer was in other respects similar to the **Kimac**, though magnification was somewhat greater. 12 cardboard-mounted slides of circus scenes supplied with viewer.

Hollywood De Luxe (Craftsmen's Guild, Hollywood). \$3. Plastic viewer. Adjustable-focus lens. Lack of sharpness at corners. Frames supplied for 35 mm., 16 mm. and 8 mm. strip film.

Chromat-O-Scope (Chromat-O-Scope, Los Angeles). \$3.50. Wooden viewer. Adjustable-focus lens. Diffusing screen removable to permit internal cleaning. Image cut off slightly at corners and lacked sharpness along edges. Sturdy construction.

Da-Brite (Mostow Co., Chicago). \$1.95. Plastic viewer. Adjustable-focus lens. Lack of sharpness at corners. Frames

HAND VIEWERS

for color-film transparencies

An evaluation of some popular brands and types

Users of 35 mm. cameras who wish to view an enlarged image of their color transparencies will find many hand viewers to choose from. As a group, these viewers are cheaply made and grossly overpriced, but they do the job for which they are intended reasonably well. Essentially, they consist of a single double-convex lens, a diffusing screen, and a slot between lens and screen to hold the transparencies.

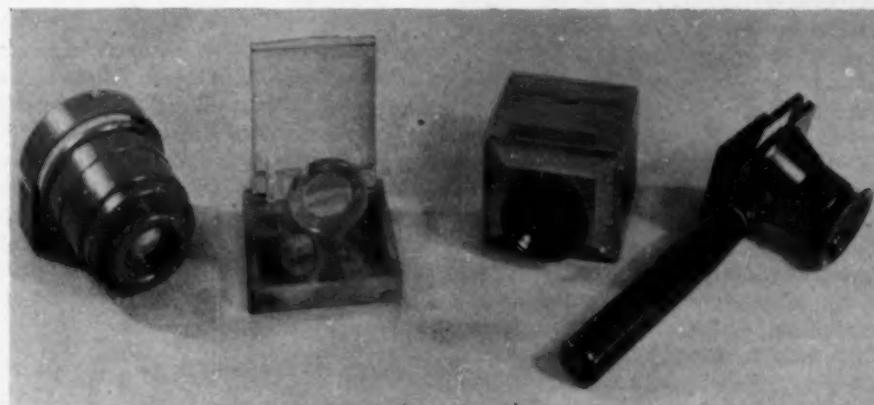
Hand viewers are all one-eye affairs, making it necessary to close one eye, since the user must face a strong light. All the viewers had uncorrected lenses that show more or less curvature of the image. With the type of lens used, the greater the magnification, the greater the curvature.

The viewing lens is removable in some brands and fixed in others. Since both lens and screen are certain to need cleaning sooner or later, viewers that cannot be taken apart for cleaning and easily reassembled will become unsatisfactory in time.

Another flaw found in all the hand viewers examined was that the slots were designed to accommodate thick glass-mounted slides, hence the thinner cardboard-mounted slides were not held straight. This caused some loss of sharpness. With some of

the viewers, furthermore, light entered through the sides of the slot. The corners of the transparencies were cut off in some viewers, though with most slides this is not a serious defect.

In selecting a viewer, especially if the lens is not adjustable, one should carefully note whether the focus is satisfactory over the entire field of the slide. Viewers with an adjustable lens will be found more satisfactory in this respect than those with a fixed lens. Wearers of spectacles will find that it will be impossible to view the



TYPES OF VIEWERS: The plastic **Hollywood De Luxe** (\$3), the collapsible **Da-Scope** (\$1.79), the wooden **Chromat-O-Scope** (\$3.50) and the **Kimac** with detachable handle (\$3), shown left to right.

supplied for 35 mm., 16 mm. and 8 mm. strip film.

Hollywood (Craftsmen's Guild). \$2.45. Not the same as Hollywood De Luxe, above. Plastic viewer. Lens not adjustable. Lack of sharpness at edges.

5-in-1 Vuer (G. Gennert, NYC). \$1.75. Plastic viewer. Adjustable-focus lens. Mottled diffusing screen. Corners cropped slightly; lack of sharpness at edges. Frames supplied for 35 mm., 16 mm. and 8 mm. strip film.

Da-Scope (distrib. Willoughby Camera Stores, NYC). \$1.79. Plastic viewer, could be folded to small, compact size when not in use. Relatively low magnification, but good definition and coverage. Diffusing screen mottled and too transparent to provide adequate diffusion. Acceptable only for those who want to carry viewer in pocket or purse.

NOT ACCEPTABLE

The following viewers were judged "Not Acceptable," primarily because they could not be cleaned internally:

Magna-scope Dimensional (Gem Photo Supply Co., NYC). \$2.50. Wooden viewer. Lens not adjustable.

Caspeco Dimensional (Camera Specialty Co., NYC). \$1.25. Wooden viewer. Lens not adjustable. Diffusing screen grainy.

Wesco (Western Movie Supply Co., San Francisco). \$7.50 with 12 *Kodachrome* scenic slides. Viewer appeared identical with **Caspeco**, above.

Ultra-vue (Chromat-O-Scope Co.). \$2.50. Plastic viewer. Adjustable-focus lens. Mottled screen. Image cut off at corners and lacked sharpness at corners.

cur on a surface that is colder than the air itself. Ordinary basement walls, for example, are always cold, so that if the humidity is high condensation tends to take place. A simple test to see whether dampness is due to condensation is to see whether the basement is damp after a dry spell of several days. If it is damp, the trouble is probably the result of condensation.

Penetration of masonry walls by water can take place by leakage through cracks, or by seepage through pores in the brick or concrete. The cracks usually occur in the mortar joints, but may extend across and through the masonry. If the dampness increases noticeably up to a few days after a heavy rain, water is probably penetrating the walls.

In order to eliminate dampness, three procedures are possible. They are: (1) diversion of the water at its source, (2) repairs to the building, and (3) application of a waterproofing. It is most important that the cause of the wetness be studied carefully before you decide on the best remedy. Avoid, for example, the mistake of having an expensive waterproofing job done when something simpler or better is available.

TREATMENT OF CONDENSATION

If condensation is the cause of dampness in the basement, various measures may be used to mitigate or overcome it. The colder the walls, the more difficult is the cure. Sunshine which may warm the basement, and good ventilation can be very effective. Close overhanging vines, shrubbery or trees, which are productive of very deep shade, may be pruned or thinned out. Windows in the basement may be kept open day and night, and closed only in sultry weather or during rainy spells.

Dry heat, as from a coal-burning, not-to-well-insulated hot water heater can be very helpful.

Leaky plumbing should be repaired.

Avoid the application of cement-water paint to the walls when the chief trouble is condensation, as this may result in a smooth surface that will hold condensation on the surface instead of allowing it to be absorbed.

Calcium chloride may be effective by absorbing moisture that would otherwise condense on the basement walls or floor. Small amounts are useless; several hundred pounds (at about 3¢ a pound) will be needed in the course of the summer. Further-

actually result in worse condensation.

It is impossible to stress too strongly the importance of selecting the correct remedy. Some products may give some protection against moisture when first applied, but the effect may last only a short time before dampness recurs. This is particularly true of cement paints applied as waterproofing to the inside of walls, and of colorless wax paints in general.

The newest panacea for wet basements is *Aquella*. (See *Consumer Reports*, May 1946.) The producers of this widely-advertised product claim that it rid the Maginot Line of water, therefore it will free your basement of dampness. Were this claim true, *Consumer Reports* would be among the first to recommend this product. However, *Aquella* is not a "Best Buy." Nor is it unique. *Aquella* is a cement-water paint similar to many others selling at much lower prices. And *Aquella* tested no better than other cement-water paints in Bureau of Standards tests.

CAUSES OF DAMPNESS

Dampness is usually caused by (1) condensation of moisture in the air, or (2) penetration of water through the walls or floor.

Condensation of moisture will oc-

WET CELLARS

A discussion of their causes and cures, for the troubled home owner

The problem of how to dry up wet basements or damp walls is a vexing one to many householders. They have for years been confused by the mumbo-jumbo of supposed experts and lured on by highly advertised quick-and-easy waterproofings. They try one method after another and eventually they may end up with something satisfactory, but the trial and error method is costly and takes time.

It is important for the householder to remember that there is no one general method that can cure any wet cellar. The techniques and the materials used must depend on the cause of the dampness. For a particular cellar, waterproofing may be anything from a very simple to a relatively difficult job.

The important thing is first to find out the cause of the wetness, and then to determine the best and cheapest method of overcoming it. For example, water in the basement resulting from condensation of moisture in the air may sometimes be eliminated merely by proper ventilation. Yet, many home owners have spent a hundred dollars or more to have a thin coat of waterproofing paint applied to the inside walls of the basement in an attempt to remedy the difficulty. This would not only be a waste of time and money; it might

more, disposal of the salt after use is difficult.

A measure which is effective but expensive is to insulate the basement walls and floor. Foam glass or other mineral cellular insulation should be used. If it is placed on the floor, it should be covered with a layer of concrete.

DIVERSION OF WATER

SURFACE WATER: Water that penetrates a wall may be surface water, running off a hillside or shed from a roof. Rainwater from the roof, collected by gutters, is sometimes discharged by the downspout at the edge of a wall, where it collects and tends to penetrate into the basement. Roof water should be diverted away from a basement wall by a narrow concrete gutter constructed under the spout to lead the water away to a sewer. An alternative is to provide a splash block beneath the downspout to dissipate the water.

Run-off water from a sloping yard often accumulates against the basement wall and penetrates into the basement. To divert the water from the building, the ground surrounding the wall may have to be re-graded so that it will slope away from the wall. The re-graded ground should be given a slope of at least $\frac{1}{4}$ inch per 12 inches for a distance of 8 to 10 feet away from the wall. After re-grading, the ground should be sodded.

Another method of diverting run-off water is to lay a concrete gutter walk against the wall to divert the water to a sewer outlet. The gutter should be about 18 inches wide, 3 inches deep and graded 1 inch in 18 feet.

GROUND WATER: If the level of the ground water rises above the level of the cellar floor, the pressure of the water will probably cause it to penetrate the walls and floor. You can divert ground water effectively with a tile drain pipe, which can be used if a sewer outlet is available. Specifications for new houses should provide for a drain pipe whenever possible.

If the house is on a hillside, it may be necessary to install the drain only along the wall facing the hill, otherwise it is better to have the drain surround the building. If there are springs around or under the basement, one or two branch drains can be laid.

The drain should be straight and have but little slope. It can consist of

Watch for . . .

Work on the following reports, among others, is either now under way or scheduled to begin soon:

Refrigerators
Radio-Phonographs
FM Radios
Portable Typewriters
Typewriter Ribbons
Washing Machines
Exposure Meters
Storage & Flashlight Batteries
Electric Toasters
Electric Clocks
Golf Balls
Peanut Butter
Depilatories

4-inch concrete pipe, well-burned drain tile, or sewer pipe. To lay such a drain, it is necessary to excavate a trench $1\frac{1}{2}$ feet wide. Lay the tile close to the bottom of the cellar wall or footing course. Keep the joints of the drain tile open about the thickness of a knife blade in order to allow the ground water to enter and be carried off to the drainage outlet or sewer. The joints should be protected from dirt by tying or wiring non-corroding metal mesh, 6 inches wide and about 17 inches long, around each joint. Burlap, linen or other porous fabric may also be used but these are less desirable.

After the tile has been laid, the trench is filled with $\frac{1}{4}$ inch to 1 inch screened gravel or broken stone. This should be stacked to within a foot of the grade surface. Before this stacking is done, some of the finer gravel should be laid all around the drain tile to protect it. The stacked gravel should be covered with a protective filtering mat of oil bagging, burlap, hay, straw, cornstalks, or fine brush. A foot of top soil should be placed on the protective mat. The soil should be graded away from the building, and sodded or seeded for grass.

REPAIRING THE STRUCTURE

Water may get into above-grade masonry walls as the result of defects in the roof. Water may splash against the above-grade walls, and collect at the basement walls, if the roof flash-

ings are defective or the roof gutters leak. Roof, flashings and gutters should be inspected, and repaired if necessary, to eliminate these sources of penetrating water.

Leakage through any wall can take place through cracks in it. Cracks in monolithic concrete walls may be sealed by a combination of cement grout (one part Portland cement and one part fine sand passing a No. 30 sieve and coarser than a No. 100 sieve, with enough water added to give a rich cream consistency) and mortar (a mixture of one part Portland cement and $2\frac{1}{2}$ parts ordinary sand). A groove should be cut along the crack at least one inch deep and one inch wide. The surfaces should be dampened and the cement grout scrubbed into the groove with a small, stiff fibre brush. Then a stiff cement mortar is packed into the opening. The mortar should be placed on the grout while the latter is still soft, and then kept damp for at least three days after application.

Cracks in bricks and masonry should be brushed with grout, then filled with a thick grout or with mortar. Mortar should be used if the cracks are large.

If water is flowing through a crack, as in basement leaks, an emergency plug can be made then and there from Portland cement containing 5% calcium chloride made into a paste with water. The plug must be held in place with a block until it has hardened. For a large leak, the hole may be plugged in this way bit by bit. During a dry period, the temporary plug can be replaced with grout and mortar, as described above.

Straight cracks between the basement floor and wall may be stuffed with oakum, and then sealed with grout and mortar.

Mortar joints in above-grade walls that are not structurally sound, or are sound but porous, are a frequent cause of leakage of the wall. Usually the cheapest effective way of correcting this condition is to paint the entire outside wall with a cement-water paint. Structural correction of this condition is to point the joints if they are unsound, or to grout them if they are porous. In order to insure good results all the joints should be pointed or grouted, not only those that seem defective. Pointing or grouting the joints in this way is highly effective, but generally very expensive.

Mortar joints should be pointed by cutting them out to a depth of about $\frac{1}{2}$ inch, and then refilling with a mor-

tar having the same color as that originally used. The brick, or other masonry, should be dampened before the joints are pointed.

In grouting, the joints should first be thoroughly dampened, then the grout applied thinly and scrubbed into the mortar. Any cement that gets on the brick may be wiped off with a wet sponge. Joints that have been cut off by the mason are more effectively grouted than those that have been tooled.

WATERPROOFING BELOW-GRADE BASEMENTS

If it is not feasible to divert the water that penetrates the basement wall, or to repair the wall, a waterproofing agent may be used. Where the ground water exerts a more or less continuous pressure against the wall, and where settlement of the walls may occur, a *bituminous membrane waterproofing* is indicated. This is the most effective, the most durable, and the most expensive. Where the ground water pressure is intermittent, and little if any settling of the walls might occur, a *bituminous coating waterproofing* may be employed. For mild conditions and with no danger of settling of the walls, *Portland cement mortar* can be employed as a waterproofing. To be most effective, these coatings must be applied to the outside of the walls. However, *Portland cement mortar* has given good results when applied to the insides of the walls, although not as good as when applied to the outside.

A bituminous membrane or coat laid on the floor must be protected by a concrete floor above it. If there is not enough headroom for this, the old floor must be removed before application.

Despite the extravagant claims of certain manufacturers, tests by the U. S. Bureau of Standards have shown that cement-water paints have little value as waterproofing agents when applied to the insides of the basement walls. At best, only temporary relief from water penetration can be obtained with them, and within too short a time the original dampness will return.

If a hot bitumen (coal tar or asphalt) is employed, the waterproofing is best applied by a skilled contractor. If it is to be applied by the householder, directions must be followed implicitly. In fact, the proper technique of application is as important as the waterproofing agent itself; the

best waterproofing will not give satisfactory results if the instructions for application are not carefully followed.

The surface of the masonry must first be carefully cleaned. Dirt should be washed off with water. If efflorescence (salt incrustation) is present, apply a 20% solution of muriatic acid (diluted hydrochloric acid), and after about five minutes scrub off the salt with a stiff bristle brush. It is advisable to wear rubber gloves while working with the acid, as it irritates the skin. Care should be taken that no acid gets into the eyes. After the salt has been scrubbed off, wash the surface with clean water. The same acid treatment is used for removing old coatings of whitewash, and flaking or scaling cement. Old coatings of oil, resin or other organic paint must also be completely removed prior to any cement or cement mortar application. Usually this is done most effectively by sand blasting.

BITUMINOUS MEMBRANE WATERPROOFING: The surface to be waterproofed should be clean and free of dirt or sharp projections. Sometimes it is necessary to apply a coat of *Portland cement mortar* to obtain a smooth working surface. The membrane waterproofing consists of three or more alternate layers of coal tar pitch or hot asphalt, and cotton fabric or felt. Coal tar pitch is preferable. A priming coat (consisting of creosote oil if coal tar pitch is used, or of asphalt dissolved in mineral spirits if asphalt is used) is applied to the clean wall surface. The priming coat is followed by a hot mopping of the bitumen. Then a strip of fabric is laid over, followed by hot bitumen, and then another strip of fabric overlapping the previous strip by at least three inches. The alternate hot mopping and placing of fabric are repeated until three or more complete layers are in place. In some cases it is advisable to protect the exterior of the membrane from abrasion by applying a sheath of *Portland cement stucco*, clay brick or concrete over the last layer.

BITUMINOUS COATING: The exterior wall should be clean and free of pits or sharp projections. A coat of *Portland cement mortar* may be applied to the wall in order to obtain a smooth surface. The bitumen may consist of hot asphalt, hot coal tar pitch, a water emulsion of asphalt, or a trowel coating of bituminous mastic. Of these, the coal tar pitch is best. If the bitu-

minous coating is protected on the outside with a layer of cement mortar, a cold bitumen may be used.

PORTLAND CEMENT MORTAR: Before the mortar is applied, the masonry surface must be thoroughly cleaned, as explained above. Two coats of mortar, each consisting of one part *Portland cement* and $2\frac{1}{2}$ parts sand, are required. Each coat should be $\frac{3}{8}$ inch thick.

The walls are first thoroughly dampened with a garden hose adjusted to a very fine spray, about an hour before applying the coating. A grout consisting of *Portland cement* mixed with water to a rich cream consistency should be scrubbed into the wall with a stiff broom or scrub brush.

The first coat of mortar should be applied while the cement grout is still soft. Before the first coat of mortar hardens it should be scratched with a coarse broom. This provides a rough anchoring surface for the second coat of mortar. Beginning 6 to 12 hours after the second coat has been applied, the surface should be cured by sprinkling it with a very fine spray two or three times a day for three days.

WATERPROOFING ABOVE-GRADE WALLS

For the waterproofing of above-grade walls, cement-water paints and colorless liquids have been used. The latter consist of solutions of paraffin, tung oil, or chlorinated rubber; or emulsions of waxes or linseed oil, in a volatile solvent.

In Bureau of Standards tests, no colorless liquid was found to be a durable waterproofing. Of the proprietary liquids tested, the most promising was *Gargoyle Ceremul-W* (Socony-Vacuum Oil Co., NYC), a milky-white wax suspension. But even this lost much of its effectiveness after exposure to weather. A further disadvantage of such wax mixtures is that they hinder any subsequent attempt to apply cement mortar or a cement-water paint. The organic wax deposit must be thoroughly removed, as by sand blasting, before a cement waterproofing can be used.

CEMENT-WATER PAINTS: These are very effective waterproofings for porous, water-permeable masonry, such as coarse-textured brick, cinder-block, concrete block, light weight aggregate block, or for any masonry in which the mortar joints are porous. They are satisfactory when applied to the

surface of swimming pools. Cement-water paints, in white or pastel shades, are also used for decorating and improving the lighting of masonry walls in basements, areaways, landings, and the exterior of buildings.

Cement-water paints should be used only on outside surfaces. As already noted, they are not effective if used on inside wall surfaces of basements where water penetration exists. They may aggravate condensation by closing the surface pores in the basement masonry walls.

Cement-water paints consist essentially of Portland cement, or Portland cement and hydrated lime. At least 45 proprietary cement-water paints, including such brands as *Bonding Cement Paint*, *Bondex*, *Medusa*, *Cement Paint*, *Cementico*, the much-advertised *Aquella*, and others, are on the market. The essential ingredient, Portland cement, varies in quantity in the different brands from about 35% to 90%. Don't purchase a cement-water paint if the content of Portland cement is less than 65%. Avoid those which contain casein as a substitute for Portland cement for coating masonry.

The usual price of a cement-water paint is about 15¢ a pound, though *Aquella* has been selling for 46¢ a pound. The actual cost of the ingredients at retail is about 3¢, so that if a large area is to be covered, it is economical to buy the ingredients and mix them yourself.

The amount of paint required per unit area depends upon the texture of the masonry and the composition of the paint. One pound of paint powder will cover about eight square feet of surface on the first coat, and about 25 square feet on the second coat.

Formulas for cement-water paints are given in Federal Specification TT-P-21 (1941). The ingredients are Portland cement, hydrated lime, and a small amount of stearate, salt and pigment. Tests at the Bureau of Standards have shown that none of the ingredients, other than Portland cement, improved in any noticeable way the waterproofing effectiveness. Hydrated lime is, however, useful to facilitate spreading. Stearate is useful in maintaining a clean paint surface. A pigment contributes an enamel effect and color.

A simple formula for cement-water paint, based upon Bureau of Standards published recommendations is, per 100 pounds,

Waterproofed Portland cement 70 lb.
Hydrated lime 30 lb.

The above formula is for waterproofing walls for which decoration is of no consequence. The finished coating will be dull grayish to brownish, depending on the brand of cement used. If a white cement-water paint is desired, use instead of waterproofed Portland cement, the more expensive *white waterproofed Portland cement*, and add three pounds of either *titanium oxide* or *zinc sulfide*. If waterproofed Portland cement is not available, use ordinary plain or white Portland cement and add one pound of calcium stearate to the above formula.

The hydrated lime should be mason's hydrate. The bag should bear the following statement: "Less than 8% Uncombined Oxides."

For very coarse-textured masonry, such as concrete-cinder block, fine silica sand should be included in the cement-water paint in order to fill the coarse pores of the masonry. The sanded paint should be used only in the first coat. Add to the above formula, 70 pounds of white or light-colored silica sand fine enough to pass a No. 30 sieve. For the second coat use the regular cement-water paint formula.

It is difficult to add tinted pigments to cement-water paint at home and get a uniform product. Therefore, if you need a tinted cement-water paint, buy a commercially prepared product made by a reputable manufacturer, since he has the facilities for milling in the pigment uniformly.

When preparing the dry batch, stir 50 pounds at a time in a tub. After thorough mixing, sift the mixture two or three times through ordinary window screening. Store the mixture in a moisture-proof container.

Only when you are ready to begin work should water be added. Add the water in small amounts, stirring constantly, until a rich cream consistency is obtained. About two to four quarts of water per ten pounds dry mix will be required (less if silica sand is present). For the first coat applied to open-textured masonry, the paint should be thinner than rich cream. The spreading (workability) will be improved if the paint is allowed to stand 20 to 30 minutes with occasional stirring, before using. Most paints remain in a usable condition for three to four hours after mixing with water, but in hot weather, the paint should be used within three hours. If

the paint stiffens, stirring vigorously will sometimes restore its fluidity. If stirring is not effective, the paint may be retempered by adding water in small amounts while stirring.

The surface to which the cement-water paint is applied should be first thoroughly cleaned with water, and acid if necessary, as described above. Painting should not be done if the masonry is frozen, nor if there is a possibility that the temperature may fall below 45° F. within 48 hours after the paint has been applied.

The cement-water paint should be applied with a scrub brush, fender brush, or roofing brush. Each coat should be scrubbed vigorously into the wall. Thick films are less durable than thin films.

Within an hour before the first coat, the wall should be thoroughly dampened with a fine hose spray. However, there should not be a noticeable water film at the time the first painting is started. Six to 12 hours after application of the first coat, wet cure it by moistening with a very fine spray of water, and repeat in 6 to 12 hours. If the masonry is very porous or the day very hot, it should be water-sprayed oftener.

The second paint coat can be applied within 24 hours after the first. Six to 12 hours after the second coat has been applied, it should be cured by dampening with a very fine spray, and repeating the dampening every 6 to 12 hours for two days.

REFERENCES

Some of the material in this report has been obtained from the following references, which may be consulted for further details:

Farmers Bulletin No. 1572, U. S. Department of Agriculture (1929).

National Bureau of Standards, Report BMS 95 (1943), also Letter Circulars LC-721 (1943), LC-747 (1944), and LC-813 (1946).

Federal Specifications TT-P-21 (1941).

Journal of the American Concrete Institute, 13, No. 6 (1942).

The letter circulars may be procured free from the Bureau of Standards, Washington, D. C. The other government publications may be procured, if available, from the Superintendent of Documents, Washington, D.C. at 5¢ for the Bulletin, 15¢ for the Report, and 5¢ for the Specification. The Journal may be obtained from the American Concrete Institute, 7400 Second Boulevard, Detroit 2, Mich., for 25¢.

Asthma and Hay Fever

CU's Medical Adviser discusses the importance of psychological factors in these allergic disorders

Hay fever and asthma are among the commonest of the so-called allergic disorders. Treatment has usually been along well-established patterns involving injections, inhalations and the taking of drugs. Yet, as the following case report indicates, psychological treatment or psychotherapy offers great possibilities for relief or cure.

CASE HISTORY

A man with a history of many years of severe asthma had obtained such poor results from the usual types of medical treatment that he finally entered a hospital in order that he might be studied from a psychiatric point of view. He came with a bag full of medicines and ampoules which had to be taken at regular intervals, according to the directions of his family doctor. The psychiatrist who now assumed the care of the patient ordered the nurses to stop all medication. The patient was annoyed at this, more so when he shortly began to suffer from a fairly severe attack of asthma. When the nurses still refused to give him the drugs he wanted, he insisted on seeing his new doctor. When the doctor arrived, the patient was breathing with difficulty—he was in the midst of one of his usual severe asthma attacks. First he asked the doctor for his medicines, then when the psychiatrist told him quite firmly that he could not have them, the patient flew into a rage, cursing the doctor with great vigor and volume. A moment later the asthma seizure abruptly stopped.

This is an actual case report described by doctors at a large medical center.¹ It is, furthermore, a vivid illustration of the effects of emotional tension on a typical allergic disorder—bronchial asthma. The patient got rid of a lot of pent-up tension, with the doctor acting as a convenient target for his discharged emotions. Experiences such as this are occurring more and more frequently in the practice of psychiatrists and other doctors who are interested in the rela-

tionship between emotional tension and the common ailments of man.

For more than 30 years it has been known that a large percentage of our population has a tendency to develop allergic disorders. Such persons are sensitive to the action of "allergens." Allergens are usually protein substances—pollens, dust, animal parts, foods, etc.—which excite reactions when they come in contact with sensitive or allergic tissues. Thus, if dust reaches the bronchial mucous membrane of a person who has an allergic tendency and if the membrane is the sensitive "shock-organ" in this person, an attack of asthma will occur. Or if a person with an allergic tendency has a nasal mucous membrane that is sensitive to pollens, he will get "hay fever" when the pollens settle on the lining of the nose. The dust and pollens are also known as "antigens." By reacting with an antibody in the cells of the bronchial or nasal lining, a substance (probably "histamine") is released which causes swelling of the tissues and typical symptoms of asthma or hay fever.

These facts about allergy have provided the basis for the conventional treatment of allergic disorders. Gradually increasing amounts of the allergen to which a patient is sensitive are injected over a period of weeks or months in order to "desensitize" the tissues. Many cases of asthma and hay fever are relieved or cured by such treatment. A considerable number—such as the case cited at the beginning of this article—are not relieved or cured. Such cases have been neglected because many doctors have been slow to understand the profound effects of emotions on common disorders of mankind and to use the new techniques of treatment discovered by psychiatrists and psychoanalysts.

PSYCHOLOGICAL FACTORS

Up to recently, few articles or books paid any attention to psychological factors in allergic disorders. Yet every observant doctor, as far back as Hippocrates, has noted the connection between the state of mind and the frequency or intensity of al-

lergic reactions. It was common knowledge that anxiety, resentment, disappointment and sexual tensions could affect allergic reactions. Yet doctors were unable to use these observations effectively in their treatment. Today, most textbooks and articles on the subject pay their respects to the newest branch of medicine—psychotherapy.

Psychotherapy, as practiced by the skilled psychiatrist or the doctor trained in psychiatry, can frequently eliminate the symptoms of asthma or hay fever. The allergic constitution, which is an inherited property, is not eliminated, but the capacity of the various tissues to react to allergens such as dust or pollens can be so profoundly affected that either complete cure or considerable relief can often be obtained where orthodox injection methods have failed. A patient successfully treated by psychotherapy will still get a skin reaction when the offending allergen is injected, but he need not suffer any longer from typical attacks of hay fever or asthma.

Some doctors are, however, still unwilling to recognize that psychic factors do play a part in allergy. But these same doctors are actually unconscious practitioners of psychotherapy despite their devotion to injections and drugs. Every time they inject a patient with a pollen or dust solution with the conviction that they are making use of the most scientific method of treatment, they are at the same time practicing psychotherapy. For a doctor's own conviction about the value of a treatment is easily transmitted to a suggestible patient. This is crude psychotherapy, it is true, but it is often quite effective in certain types of patients. Other types

NEW DRUGS

Two new drugs, "Benadryl" and "Anthallin," bear promise of being superior to most other drugs used in the treatment of symptoms occurring in asthma, hay fever and allergic skin disorders. It is too soon to say whether these drugs will completely replace injections and other drugs. Results in the practices of doctors making trials with the drugs indicate, however, that cases of "allergy" with strong psychologic elements in the symptoms do not respond to either "Benadryl" or "Anthallin."

¹ Dr. N. T. McDermott and Dr. Stanley Cobb, Harvard Medical School: "A Psychiatric Survey of Fifty Cases of Bronchial Asthma," *Psychosomatic Medicine*, April, 1939.

of patients need more refined methods of psychotherapy.

COMBINATION OF FACTORS

Before discussing the more refined methods, it is appropriate to point out that no scientifically trained doctor would insist that mental factors alone can cause, precipitate or induce attacks of asthma, hay fever or any other truly allergic disorder. As already stated, there must exist an allergic constitution, which is usually inherited. There must, furthermore, be a sufficiently sensitive or receptive tissue. Given these two basic ingredients for the allergic reaction, however, an emotional complex can be the decisive or essential factor required for setting off the allergic reaction. In all disease or symptoms of disease, there are many determinants that interact before the disease or symptoms appear. Thus, simple exposure to the virus of poliomyelitis will not cause the disease. Other factors, such as fatigue, heredity, age, nutrition and emotional tension, play a role. The development of an infectious disease or any other disease, for that matter, is the resultant of the interaction of many determinants, some physical, some mental and some environmental. The same interaction applies in allergic disorders. Only a beginning has been made in determining the relative importance of these factors in different individuals. But what has been learned is that psychic factors are often the dominant or decisive element in the development of a disorder.

Long ago Dr. Sigmund Freud showed that psychic factors were important in allergic disorders. After him, a number of psychiatrists (Doctors Dunbar, Fenichel, Wilson, Saul, Alexander and French, among others) made important contributions on the relation of the psyche (or mind) to allergy. Dr. Alexander and Dr. French, with their associates at the Chicago Institute of Psychoanalysis, have made the most recent and complete study of emotional factors in bronchial asthma.² Their study showed that by encouraging the patient to talk freely about matters which he had always kept to himself, considerable improvement or even cure could be obtained. The value of this method of treatment—called “catharsis” or confession—had long been known, but the Chicago group has demonstrated in the most con-

vincing way how effective this technique can be in at least one variety of allergy—bronchial asthma.

This group of doctors found that in many of their asthma patients, there seemed to run as a continuous undercurrent, usually deeply repressed—a fear of estrangement from the mother or “mother-substitute.” (A person to whom the patient is deeply attached, on whom he is dependent for love, and who plays the role that the mother used to have is referred to as a mother-substitute). The typical asthma patient feared loss of the mother’s affection because of certain of his thoughts or feelings which the patient believed the mother would consider evil or offensive. When the patient acquired enough confidence in the doctor to confess freely and fully the formerly forbidden thoughts, feelings and impulses, he obtained relief. Sometimes the relief resulting has been quite prolonged. At other times, new attacks occurred, and the doctor had to discover what new disturbing feelings were oppressing the patient, and encourage him to talk about them.

CONFIDENCE ESSENTIAL

As Dr. French points out,³ “The principle upon which this kind of therapy is based is a very simple one. As in every psychotherapy, the patient, by continued contact with the therapist, must gain confidence in the therapist’s objective, non-condemning attitude. As the patient gains confidence that the therapist will not be offended by matters that might have offended the mother, he gradually becomes able to confess matters that he could not confess before, and in this way obtains relief for shorter or longer periods.”

The confessional or cathartic method of treatment is useful not only in asthma but also in the treatment of other psychosomatic disorders such as stomach ulcers, “colitis,” arthritis, etc. It is also frequently useful in relieving anxiety or hysterical symptoms in so-called pure neuroses. The mechanism of the mental processes varies in different individuals and probably in different disorders. But there is no question of the value of free discussion with an understanding doctor. It is one of the fundamental methods of psychotherapy.

It should be noted that Dr. French states that the treatment requires “continued contact with the therapist.”

ist.” Unfortunately, “continued contact” with any doctor costs a lot of money. Continued contact with a psychiatrist costs even more—far more than most people can afford to pay. In order to get the fullest effect from treatment, the patient must see the doctor one to three times a week, often over a period of several months. If the doctor is an internist with some training in or understanding of psychotherapy, the fee may be \$5 to \$10 a visit. If the doctor is a psychiatrist the fee may be \$7 to \$15 a visit. A little arithmetic will disclose that the cost of the valuable method of psychotherapy may be from \$10 to \$50 a week—too often the latter. And this is far more than the average family can afford to spend on a single disorder in a member of the family.

HIGH COST OF TREATMENT

The high cost of good medical care is the most important reason why most persons with an allergic or other psychosomatic disorder cannot avail themselves of the proper treatment. If they are so poor that they can pass a “means test,” that will gain them admittance to a public clinic, they will find that most clinics do not have the facilities or the doctors trained to give such treatment. How quickly it becomes available to the majority of the people will depend mainly on whether a system of health insurance is put into effect that will enable all families to buy high-quality care without going into debt, and that will give financial incentives and subsidies for the training of more psychiatrists. Present fee-for-service medicine and voluntary insurance plans do not make high-quality medical care, including skilled psychotherapy, available to most persons.

If you can afford it, you will do well to try psychotherapy for asthma or hay fever, particularly if conventional methods have failed or have been ineffective. If you can’t afford it, you can still seek relief by “orthodox” methods—a course of injections with specific allergens and the use of drugs such as ephedrine, epinephrine and aminophylline when symptoms occur. Inhalations with oxygen, helium-oxygen and penicillin vapor, the use of air conditioning units, and residence in pollen- or dust-free areas can be purchased at considerable extra cost. These techniques and apparatus have helped many people to obtain at least temporary relief during attacks of asthma and hay fever or during pollen seasons.

² “Psychological Factors in Bronchial Asthma,” *Psychosomatic Medicine Monographs*, 1941.

³ “Psychoanalytic Therapy,” Alexander, French, et al. The Ronald Press, N. Y., 1946.

Auto-Eroticism in Children

*A frank discussion of an important problem
by a psychiatrist. Fifth of a series of articles*

by Joseph Lander, M.D.

The subject of sex appears to be the most universally absorbing among the topics which catch man's interest. And, in the great variety of emotional disturbances which come to the attention of the psychiatrist, sexual difficulties of one sort or another occupy a leading place both with respect to the frequency with which such disturbances occur, and the unhappiness they cause. Furthermore, many studies have been made of ordinary, apparently healthy people, *not* psychiatric patients, and even in such individuals there is often found a significant disturbance in sexual function, of a degree sufficient to cause much unhappiness.

This universal interest—not a recent phenomenon by any means—together with the fact that disturbances of the sexual function constitute so prominent a problem, would lead one to expect that man would have applied himself long ago to a careful and objective study of this fundamental aspect of human functioning and human relationship. But though man can be objective about almost anything else, his approach to sex is colored by a mass of misconceptions, a heritage of bias and prejudice which has blinded him to obvious facts and has prevented him from discovering less obvious ones.

A RATIONAL APPROACH

It is only within the memory of many people living today that anything remotely resembling a rational approach was begun. Even today the capacity to study sexuality with the reasonable and scientific attitude one employs in studying the heart or the liver and their functions, is limited to an astoundingly small number of people.

It would seem not unreasonable to expect that educators, scientists, teachers, and other such professional groups could approach this subject in terms of the actual truths and the actual issues involved. It is a fact, however, that among those groups and even among most doctors, only

lip service is paid to what is established fact, and behind this lip service lies that mass of prejudice, of bias, of more or less unquestioning acceptance of traditions and beliefs which were prevalent a century ago or five centuries ago.

The subject of sexuality has become almost inextricably confused with such subjects as religion and philosophy. Ethics, morality and philosophy obviously play a role and will continue to play a role in our attitudes toward sex. What is needed is to clear the air and to determine calmly and carefully what has gone astray to such an extent as to produce the degree and extent of sexual maladjustment which we find today.

HONEST APPROACH NEEDED

Unless and until man acquires the capacity to deal with this problem in simple and straightforward fashion, to evaluate it in terms of its realities and its intrinsic facts, sexual maladjustment will continue to plague him. The estimates regarding the incidence of sexual frustration or "frigidity" in women run as high as 60% to 70%. The estimates regarding varying degrees of impotence in men are also very high. These facts alone would warrant man's giving more serious thought to the problem.

One source of trouble has been the traditional misbelief that an awareness of or interest in sex life begins at puberty, and that earlier evidence of sexual interest is a sign of abnormality. From time immemorial, people have managed in some peculiar fashion to persuade themselves that only during adolescence, and in some cases only at marriage, did sexuality first make its appearance. This was in spite of the evidence with which every mother, every nurse and just about every teacher has been faced in the care of infants and young children. Such evidence is so universal, even with perfectly healthy children, that one has difficulty understanding how the adult has managed to remain blind and has forced himself to be-

lieve in the non-existence of children's sexual interest in various forms. Obviously, it is a case of the proverbial "none so blind as those that will not see."

It is probably safe to say that every infant or child, by the time he reaches two or three, has displayed an active interest not merely in his own genitals but in those of other children about him and those of his parents. The child's fondling of his genitals is accompanied by such obvious evidence of tension, pleasure and excitement that it can safely be considered a form of masturbation. It differs radically from the masturbation of adolescence or adulthood, in that it is an almost purely physical act, without the fantasy or the psychological accompaniments which occur later in life.

In infancy, as the normal child explores his body, he accidentally discovers the pleasurable sensations when the genitals (or some other parts of the body) are rubbed or stimulated. In exactly the same way that he wants more candy after the first piece, because he likes it, he desires to repeat what was originally an accidental discovery. And he does this without actually having any ideas which we call sexual, when the identical kind of behavior occurs later in life.

ANATOMICAL BASIS

Anatomically, one can demonstrate that the genital areas are unusually richly endowed with nerve endings—minute organs which perceive various types of sensation. Nature apparently arranged this for a very special reason: the perpetuation of the species. It is as though the richness of these nerve endings and the pleasurable quality of their stimulation represent a kind of insurance, a plan to make the sexual function sufficiently pleasurable so that reproduction of the species is provided for.

All the available evidence, if one examines scientific data rather than prejudices, indicates that masturbation and the early sexual explorations of very young children are quite similar to the crawling which precedes walking. That is, no one can walk before he goes through a preliminary crawling stage—a simpler operation in which he tests and builds up his strength. Similarly, one has to walk before one can run. Another example of this is the evolution of food habits in the course of life: one has to live on fluids before taking mushy foods,

and mushy foods before one attacks solids.

An exactly similar situation occurs in the development of a healthy adult sexual adjustment; there are certain normal preliminary stages which occur pretty much as a matter of course. The early exploration of one's own body, the curiosity about other bodies, the questioning about the origin of babies and how they began to grow in the first place—these and other manifestations of sexual interest are the inevitable precursors of a healthy adult sexual adjustment.

The adult who has himself grown up with distorted ideas will have difficulty in imparting a healthy attitude to his children. Sooner or later, however, the effort must be made, if the fallacies and the distorted ideas which are now so common are not to be perpetuated.

The child who asks why his mother's stomach is getting so big deserves a simple and honest answer. There need be no anxiety lest his sexual interests be stimulated thereby. Simple terms—preferably the same words he would use when he is grown up—should be given in matter-of-fact fashion. The concept of pregnancy is so involved that obviously one cannot explain it to a three or a five year old child. However, children of this age accept and assimilate what they can from such an explanation; they simply do not concern themselves with the balance of what has been offered, if they are not ripe for it. Later, with increasing maturity, they may ask the same question again and at this point will be ready to assimilate a little more of what is told them.

When, as usually happens, however, the adult betrays anxiety at the young child's evidences of interest—

THE SEX PROBLEM

During the school year, *Consumer Reports* is used in many classrooms in the teaching of a variety of subjects at different scholastic levels. For this reason it has been deemed advisable to deal with medical problems related to sex in the Summer issues of the *Reports*, which do not go to schools. In this and the next issue, CU's Medical Board is taking advantage of the Summer vacation schedule to discuss the problems of auto-eroticism and masturbation in children.

the child's request for information about pregnancy or curiosity about the differences between himself and sister—that child cannot help perceiving the parental tension. He cannot avoid the feeling that his parents have an attitude about these subjects which is quite different from their attitudes about most other things. Ignoring his questions, or attempting to repress them, must inevitably intensify his interest and his curiosity. The parent should answer the questions in simple and honest fashion. If the parent does this, there is every likelihood that the child's sexual activity and interests will evolve in a normal and wholesome fashion.

If the child has not been exposed to harsh repression and punishing treatment for his early explorations, his early curiosity, his early experimentation with himself and others, and if he has healthy emotional relations with his parents, brothers and sisters, this infantile sexual activity will disappear by itself after a very few years. Some time around the sixth or seventh year, there is generally a sharp decrease in this interest. And until the beginning of puberty, at twelve or thirteen, this sex activity will probably remain relatively dormant.

CHANGES AT PUBERTY

With the advent of the physical changes at puberty, however, and with the development of the sexual glands (testicles in the boy, ovaries in the girl), the new glandular secretions stimulate not merely bodily changes but also psychological changes. As the secondary sexual characteristics (pubic hair, breasts, etc.) appear, there appears also a renewed interest in sexual matters. At this time there is likely to be a recurrence of masturbation as well as a certain preoccupation with fantasies about intercourse, ideas regarding pregnancy and delivery. Often masturbation is temporary. But, as in other aspects of human behavior, there is an enormous variation in the frequency of masturbation as well as in its duration. Many normal individuals continue masturbation well into adult years or when satisfactory sexual relations have been established.

In our culture, adolescence is frequently a stormy and troubled period. This is to a large extent due to the efforts the youngster is making in various ways to deal with the sexual urges he finds within himself at this time. The taboos and hush-hush attitudes in most families make it difficult to do this readily.

A certain proportion of adolescents, it is true, do not masturbate. This lack of activity should be a matter of concern rather than of reassurance to the parents. For failure to masturbate at a time when this activity is normal is seldom the result of the youngster's lack of interest or desire. Far more likely, it stems from the fact that during the adolescent's infancy and early childhood, his interest in sex met with such strong disapproval and repression that he acquired fear of further interest.

Even parental reassurance to the effect that masturbation is not harmful—that it is a part of normal sexual development—may fail to be effectual against such fear. This may be because the guilt-feeling toward masturbation has become, in effect, a "cover-up" for other types of sexual urges which the adolescent is trying to suppress. In such a case, when the parent gives his reassurance regarding masturbation, he is, in a sense, shooting at a reflection of the target, rather than at the target itself. But such reassurance should be given.

(In a forthcoming article, Dr. Lander will discuss other aspects of the child's sexual life, and the behavior of parents toward them.)

POISON IVY

Since Consumers Union first published the advice to poison ivy sufferers a couple of years ago to try the hot water treatment for poison ivy itch, it has been told by grateful members that it's now practically a pleasure to get ivy poisoning. The treatment consists simply of bathing the affected areas with hot water—water as hot as the skin can stand. Those who have tried it have gotten complete relief from itching for as much as several hours.

The hot water treatment has been recommended for years in Farmers' Bulletin No. 1166 of the U. S. Department of Agriculture. CU first passed on the recommendation after itchy staff members tried it and found that it worked far better than any of the soothing applications recommended by physicians. Why doctors generally are unaware of the hot water treatment is hard to understand in view of the widespread suffering poison ivy causes.

CUMULATIVE INDEX

Each issue of the Reports contains this cumulative index of principal subjects covered since publication of the 1946 Buying Guide issue. By supplementing the Buying Guide index with this one, members can quickly locate current material and keep abreast of changes resulting from new tests. Page numbers run consecutively beginning with the January 1946 issue: Jan. 1-28, Feb. 29-56, Mar. 57-84, Apr. 85-112, May 113-140, June 141-168, July 169-196.

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Let's Stand Together

NEVER—even during the difficult war years—has there been greater need than now for consumers to join in a collective effort to make America's economy work.

NEVER has it been more important, from both the civic and personal viewpoint, to watch every dollar that leaves the family pocketbook. You owe it to yourself to join groups in your community which are taking active steps in the fight against inflation.

And now you owe it to yourself and your friends to keep yourself and them informed of what is going on in the consumer field, and what action you can take in the fight.

An effective and economical way to do this is to form your friends into a CU group. That way, you'll all have the benefit of the buying advice in the Reports and the news of consumer activities and legislation in Bread & Butter. And if five or more subscriptions are sent in at the same time (your own renewal can count as one of them), each subscriber will have the weekly Bread & Butter and the monthly Reports, including the 384-page Buying Guide for \$3 a year, instead of the individual \$4 rate.

Start your CU group today. Just send us the names of the five or more new members, with \$3 for each one, and we'll see that they get materials to enable them to become active consumers.